APRIL, 1953

Industrial FINISHING

Published Monthly in the Interest of Product Cleaning and Painting by Practical Publications, Inc., 1342 N. Meridian Street, Indianapolis 4, Ind.

you can count on
this man *
to help develop
a better finish
for your product

*

He's an Advance service representative with wide experience in the application of finishing materials to fit any surface, method, or requirement.

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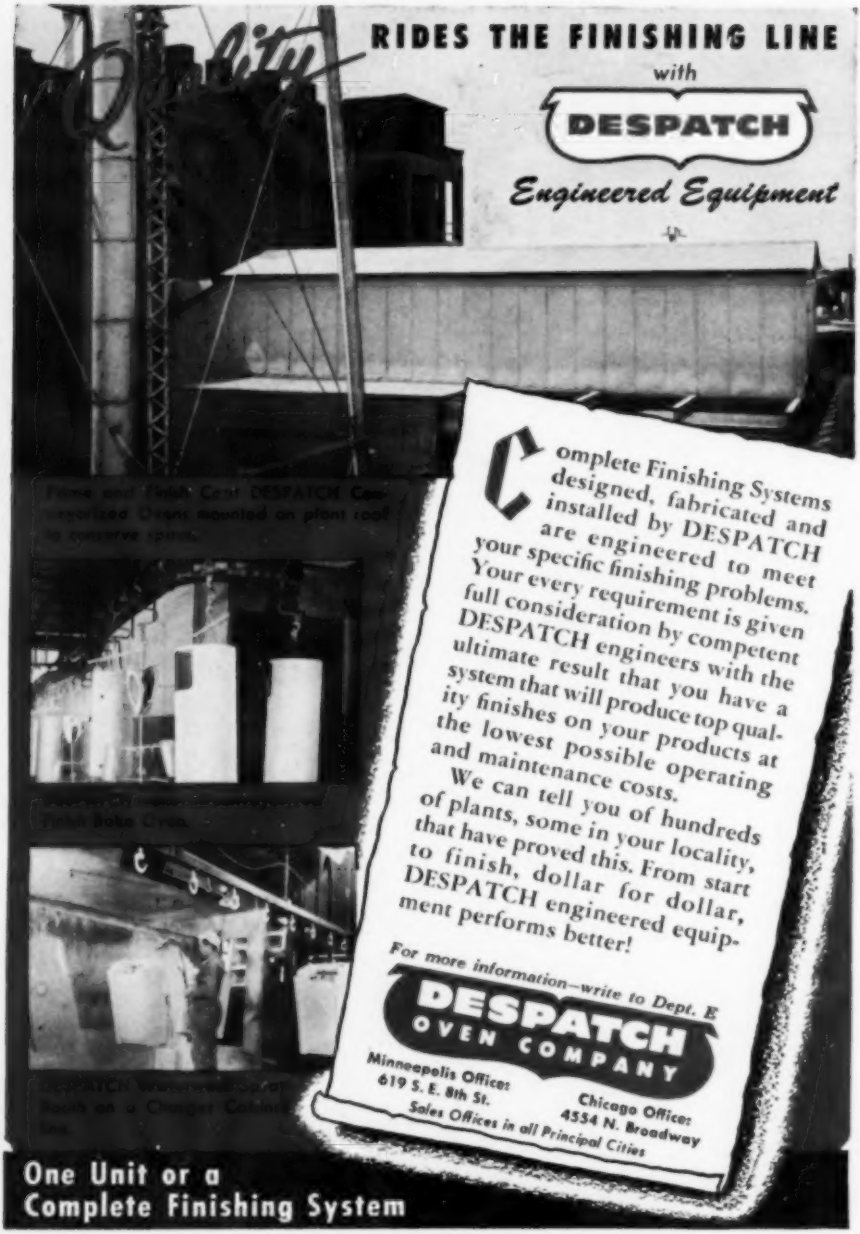
Indianapolis Indiana
MANUFACTURERS OF INDUSTRIAL FINISHES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with
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Engineered Equipment
Complete Finishing Systems designed, fabricated and installed by DESPATCH are engineered to meet your specific finishing problems. Your every requirement is given full consideration by competent DESPATCH engineers with the ultimate result that you have a system that will produce top quality finishes on your products at the lowest possible operating and maintenance costs.
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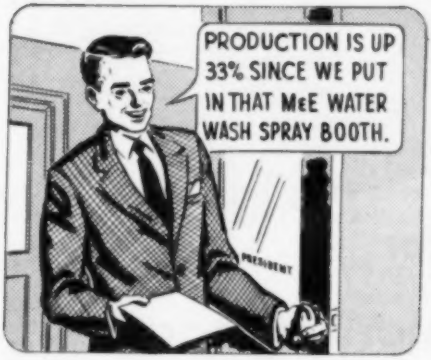
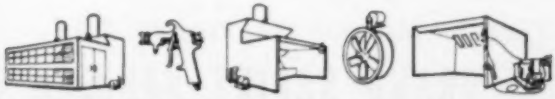
Julian Freeman, President of Freeman Store Equipment Company, says—

"OUR M & E WATER WASH SPRAY BOOTH HELPED US DELIVER ARMY TRUNK LOCKERS ON TIME • WITHOUT REJECTS"



M&E



PAINT SPRAY FINISHING SYSTEMS

M&E MANUFACTURING COMPANY • 2569 WINTHROP AVENUE INDIANAPOLIS 5, INDIANA

New Warm Tones for *Bassett* French Provincial

This graceful French Provincial in cherry is Bassett's new bedroom grouping. The finish was specially created for them in our studios to compliment the authentic Provincial styling of the group. This distinctive finish shows off the rich beauty of the cherry wood grain and in many ways adds to the saleability of each piece that it beautifies and protects.

The Better the Finish The Better the Buy

GRAND RAPIDS VARNISH CORPORATION

GRAND RAPIDS, MICHIGAN

Makers of the Famous Guardsman Finish and Guardsman Cleaning Polish

APRIL, 1953
Vol. XXIX, No. 6

CCA

A monthly magazine for finishing room and paint shop foremen, production superintendents, chemists, purchasing agents and company executives of industrial plants where product surface cleaning and finishing are major operations in the manufacture of parts and products.

Industrial FINISHING

W. H. ROHR, Editor P. C. BARDIN, Associate Editor

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29 TWENTY-NINTH YEAR OF PUBLICATION

Plastic Drawers for furniture that will not jam are now available. These one piece, light weight, smooth working drawers are moulded of Bakelite phenolic plastic, with no seams or joints to dry out and separate. Drawer fronts may be polished to add an attractive contrast to furniture.

The interchangeable molded drawers were developed by Baklelite Co., Division of Union Carbide & Carbon Corporation.

* * *

Flexible Bake Enamel. A baking enamel that is durable on metal, hard but flexible, stainless, color fast, and resistant to abrasion, corrosion and chemical action, has been developed after several years of laboratory work and testing. It is available in white and colors.

* * *

Aluminum Mesh Grilles. From England comes Expamet expanded aluminum mesh. Introduced in this country by British Industries Corp., 164 Duane St., New York 13, N. Y., it is characterized by diamond shaped and other special meshes. It is light weight and is available in 12 colors by color anodizing, or in unanodized aluminum.

Suggested uses include, grilles and other radio and electronic applications, machinery guards, tree guards, window guards, fire screens, waste baskets, letter baskets, partitions, gate and fence panels, show window and merchandise displays, etc. It is available in standard flat sheets 3 x 6-ft.

* * *

Business Seven Years Ahead. By 1960 American industry will have to invest about 200 billion dollars to achieve adequate output with the available working force, to maintain our high standard of living. So said Dean E. Carson director of research the The B. F. Goodrich Co. Mr. Carson pointed out that studies by his company indicated the total popula-

Note flexibility of enamel coating as it is spiralled around a pencil without cracking.

Dolan's

HI-SOLIDS LACQUER No. 8800

The unprecedented demands for our Hi-Solids Lacquer have convinced us that Lacquer users want High-Solids.

Dolans No. 8800 Hi-Solids Lacquer is formulated at spraying viscosity: requires no thinning. It flows out perfectly to produce a full bodied, tough, durable film, possessing excellent cold check resistance.

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We've got your number...

for a primer-surfacer that's production proved!

You can use L3714 either as an air-dry or baking primer-surfacer. Bakes hard in a half hour at 275° F. Air dries to wet sand in 4 to 6 hours. Takes topcoat of lacquer after 10 minutes air-dry. Shows very little absorption of top coat. Good for wood, masonite, steel, treated aluminum. Send for samples.

SEA-LAC

DURALAC CHEMICAL CORP.
84 LISTER AVE., NEWARK 5, N. J.

tion of the U.S., by 1960, would be 174 million people, an increase of about 15% from 1950. This population increase will be mainly an addition to the consuming group rather than to the producing group.

Greater productivity calls for more effective tools. It is estimated that the cost of these tools will be about 200 billion dollars. Looks like business will continue to be good.

* * *

Electrical Tape. A new tape, Permacel 2-in-1, combines the answer to two problems in one. It sticks at a touch and heat-cures into a permanent bond. It won't soften or come loose, slip or slide—either during varnish baking or in the end use of the product. It has excellent all-round electrical properties. It cures in one hour at 300° F. and in two hours at 250° F. It is available in all backings—paper, cloth, film or acetate fiber.

* * *

Metal Powder Storage. Still on the subject of safety, Merck Safety advises that finely divided dry metallic and alloy powders such as titanium, zirconium, thorium, tantalium, zirconium-copper and titanium-nickel be stored in tight metallic containers and not in glass containers.

Experiments have shown that these powders, when enclosed in glass bottles will ignite if the bottles are forceably broken.

* * *

Protective Wrap called "Spot-Seal," which forms a dust-proof and water repellent package, has been developed. It is produced either printed or plain, in widths from 12 to 48-in. wide; rolls are 600 lineal feet long.

The important feature of Spot-Seal is that it only sticks to itself. It requires no fastenings such as glue,

(Continued on page 122)

DON'T BE

A SPRAY BOOTH SPENDTHRIFT

Records show that improperly maintained booths run up thousands of dollars in unnecessary costs, caused by production shut-downs, extra time for maintenance, spoiled production, unrecoverable paint, and preventable booth repairs.

CUT COSTS with DuBOIS SPRAY BOOTH MAINTENANCE

Here's what you get when you do business with DuBOIS:

Thorough analysis of your operations by trained and experienced personnel. Installation of prescribed specialized compounds:

- **KLARIFIANTS** . . . Water-wash compounds to effectively control overspray
- **FILMITES** . . . coatings for dry areas of spray booths
- **STRYPP** . . . for periodic purging of old paint deposits in the hydraulic system.

FREE . . . spray booth maintenance check chart

. . . yours for the asking, a daily, weekly and monthly program for proper cleaning and maintenance of paint spray booths.

The **DuBOIS** *Co., Inc.*

Cincinnati 3, Ohio Los Angeles 33, Calif.

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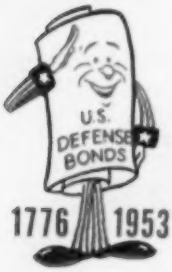
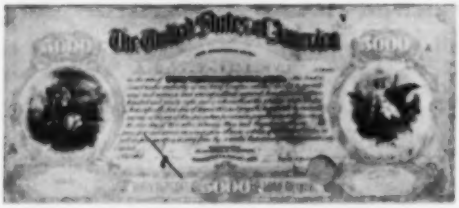


BILLY BOND presents:

★ *A series of Historical Government Bonds. Here are reproductions of the 7th and 8th bond issues of the United States.*

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★



1898—SPANISH-AMERICAN WAR
Liberty for Cuba and The Philippines

THE THREE-PERCENT LOAN of 1898 was to "provide ways and means to meet war expenditures", caused by events in Cuba under Spanish rule. The War with Spain was of short duration, only a little over 3 months. But this loan for war expenses was popular—partly because bonds were sold in denominations as low as $20. There were some 232,224 subscribers for bonds of $500 denomination or less. This was a foreshadowing of the good results obtained later in World War I, and more especially in World War II, in offering Government bonds in small denominations to moderate purchasers, so that the national debt would be spread out generally among the people.

1906—PANAMA CANAL
Linked The Oceans for Commerce and Defense
Advanced The Conquest of Yellow Fever

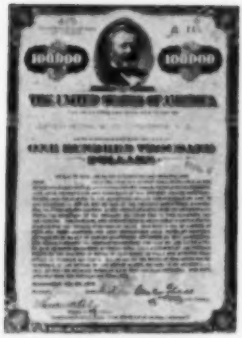
THE TWO-PERCENT Panama Canal Loan was authorized to "provide for the construction of a canal connecting the waters of the Atlantic and Pacific Oceans". The bonds were redeemable after ten years and payable 30 years from date. Interest on Panama Canal bonds sold in 1909 and after was raised to 3%. The proceeds met the cost of the zone purchased from Panama, and the rights and privileges and some equipment of the Panama Canal Co. in France, totaling $40,000,000. This "peace bond" not only enabled the United States to build the most important trade artery in the world, but also enabled heroic Walter Reed, General Gorgas and others to conquer two great scourges of mankind—yellow fever and malaria.

THE Lilly COMPANY
FINESSES
High Point, N. C.

BILLY LILLY says:

On this page we present the 9th and 10th issues of Historical Government Bonds . . . . the last two bond issues of the U. S. This brings us right up to 1953 and thus ends this series of "ads" on Historical Bonds. We hope that you have enjoyed reading them as much as we have enjoyed presenting them.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★



1918—WORLD WAR I LIBERTY VICTORY BONDS
For Freedom Against Imperialist Aggression

Series E
1941-45 WORLD WAR II DEFENSE & WAR BONDS
85 Million Americans Bought Bonds to Defeat Axis Aggression
1946-50 SAVINGS BONDS
34½ Billions of Shares in America Held by Americans
1951 AGAIN CALLED DEFENSE BONDS
In Defense of Freedom Against Communist Aggression

WHEN THE United States entered World War I, the Government raised funds to meet war expenditures through four "Liberty Loans" between April 1917 and September 1918, and a postwar or Victory Loan in May 1919. The Treasury authorities for these loans endeavored to make them a matter of popular subscription, offering bonds in low denominations. All of the loans, in sums upward from $2 billion in the first drive to $6 billion in the fourth, were oversubscribed. The four Liberty Loans and the Victory Loan raised a total of $21 billion.

WITHIN a generation after the close of World War I in Europe, the conflict broke out again. Expanding and improving upon the pattern of the preceding war finance, there was established in the Spring of 1941, the Defense Savings Staff with local offices in every state, to sell low-denomination bonds to individual investors and corporations. With the coming of war to us at Pearl Harbor, December 7, 1941, the Defense Savings Program was accelerated into a War Savings and then a War Finance Program. From May 1, 1941 through December 1945, the War Finance Committees of the Treasury were responsible for the sale of $185.7 billions of Government securities. The most popular type of Savings Bond, whether Defense or War, is the Series E Bond which begins in denomination of $25.00. With the end of the War, Series E, and also Series F and G Bonds were continued on sale, as an important means of managing the national debt. This procedure has two important purposes: to help combat inflation and to strengthen our defense program and our armed forces. Since 1776 Americans have been buying shares in America. It is part of our democratic way of life to encourage all citizens rather than a favored few to buy shares in America.

Lilly FINISHES
VARNISH COMPANY
Indianapolis, Indiana
Gardner, Mass.

SPRAY GUNS

for every purpose and material

Today, thanks to recent developments in spray guns and material handling pumps you can use spray guns for more jobs than ever before.

For example, the Binks line—in addition to guns for precision application of high-quality finishes—includes equipment for spraying thick sound deadeners to auto and truck bodies...sticky tanner's paste on hides... thin, tough coatings on golf balls...fine oil films on stampings...and even adhesive flock on Christmas trees.

And this is only a beginning. With 36 gun models and 1050 nozzle combinations currently available, Binks equipment is applying materials varying from those fluid as water to those thick as tar. So, whatever the finish or coating, Binks can tell you if spraying is possible...and what equipment to use. Send in coupon, or write: Binks Manufacturing Company, 3116-40 Carroll Ave., Chicago 12, Illinois.

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Gentlemen: Please rush my FREE copy of "SPRAY PAINTING HINTS," the pocket-size guide to overcoming common troubles in spray finishing. I understand there is no obligation.

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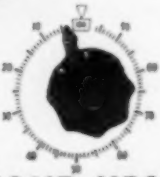
Infrared Heat

AS YOU NEED



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ALL-METAL *Chromalox* RADIANT HEATERS

NON-BREAKABLE!

Shocks, vibration, steam, splashed liquids do not damage Chromalox Radiant Heaters. There's nothing to break, nothing to shatter, nothing to contaminate work.

With CHROMALOX Electric Radiant Heaters you can dial and get precise temperatures needed for baking, drying, degreasing and other finishing applications. Ovens using Radiant Heaters can be zoned for stepped-down or stepped-up temperatures to meet the needs of the job.

CHROMALOX Radiant Heaters operate in low or high ambient temperatures; give glareless radiation in far-infrared wave lengths which are efficiently absorbed by all colors, textures and surfaces; are safe where volatiles are present. Light, dark and multi-work can be processed simultaneously; proper heater positioning assures an even blanket of heat without hot spots. All-metal construction withstands shock, vibration, rough handling and is not affected by splashed liquids. Units are compact, flexible, easy-to-install in your present equipment.

For more "know-how"

Write for Application File which shows how to increase production and reduce finishing costs with Chromalox Radiant Heaters and gives complete details on these versatile, efficient units. IC-81

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- ★ Vinyl Coatings
- ★ Phenolic Coatings
- ★ Epoxy Coatings

W&D 4639

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Coal Chemicals • Agricultural Chemicals • Fine Chemicals • Protective Coatings • Plasticizers • Activated Carbon • Coke • Cement • Pig Iron

This quality product
is protected with a
Custom Finish
created by
SHERWIN-WILLIAMS
Tube extended, after compression test shown below, shows no cracking, chipping, flaking.

BIG SQUEEZE won't mar this finish

Ever squeeze a tube of shaving cream or tooth paste and have the paint flake off? That's what happens when ordinary finishes are used.

Sun Tube Corporation solved the problem for its customers. A Sherwin-Williams custom finish, applied under controlled conditions, practically fuses with the metal. The "big squeeze" you see here is proof . . . a myriad of accordion-like bends and sharp corners, yet the finish remains intact. Also, it has excellent chemical resistance.

Maybe you have a similar problem where flexing causes finish deterioration. Or perhaps you have a different problem, which can be solved with a specially formulated coating. Your Sherwin-Williams representative can offer qualified help . . . can bring you Sherwin-Williams' broad experience in providing the right finishing materials for widely varying requirements.

Ask him, too, about Sherwin-Williams identification aids—tags, seals or decals to help you feature the finish as a quality sales "plus". Or write for booklet B-767, "How to Make the Finish Help Sell the Product." The Sherwin-Williams Co., General Industrial Division, Cleveland 1, Ohio.

SHERWIN-WILLIAMS

WHICH can help improve YOUR PRODUCT FINISHING?

What's your problem? Special effects . . . faster drying . . . hiding defects? Eliminating primer . . . reducing inventories . . . more flexibility of finish for various surfaces and application methods? You'll find the answers to these problems and many others in the following brochures:

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- ☐ **FB-505**—Kem® Fast-Bake Enamel. For metal products. Interior or exterior end-use.
- ☐ **AM-514**—Kem® Art Metal Synthetic Baking Enamel. A single-coat wrinkle finish, for metal products.
- ☐ **KL-511**—Kem Lustral® Enamel. Air-dry or bake. Spray, dip, brush. For metal, wood, interior, exterior.
- ☐ **L-503**—Opex® Industrial Lacquer. Very fast drying. For metal, wood, interior or exterior end-use.
- ☐ **D-506**—Dimenso® One-Coat. Single-coat system for hammered or opalescent finishes. Air-dry, bake.
- ☐ **F-501**—Finishing Furniture and Wood Products.

Ask for these and other helpful brochures from your local Sherwin-Williams Branch. Consult your classified telephone directory. Or check brochures you want, and mail to The Sherwin-Williams Co., General Industrial Division, Cleveland 1, Ohio.

Services of trained industrial finish specialists available in your area through nearest Branch

Your "on-the-spot" source for PRODUCT FINISHES

SHERWIN-WILLIAMS
INDUSTRIAL FINISHES

Automatic Electric Spray-Bake Coating Machine

Pays For Itself In Regular Production Within 3 to 6 Months

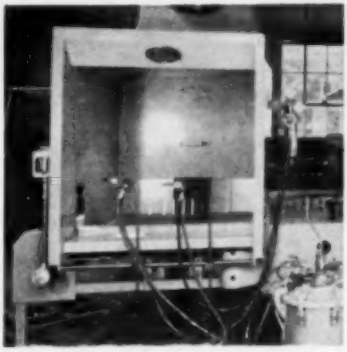
Here is a self-contained unit that cuts coating costs, boosts output and improves quality of finish. Many machines have been in satisfactory production operation for several years. List of prominent and satisfied users available on request.

It will accommodate pieces of from less than 1-in. diam. to over 12-in. diam., which require a high quality finish, such as shell noses, cartridges, weapon parts; also clocks, pens, pencils, door knobs, etc. Positioned on work holders, pieces are automatically sprayed, travel on through a drying chamber for solvent evaporation, and then into electrical strip-heated bake oven from which they emerge for a brief cooling period before being removed.

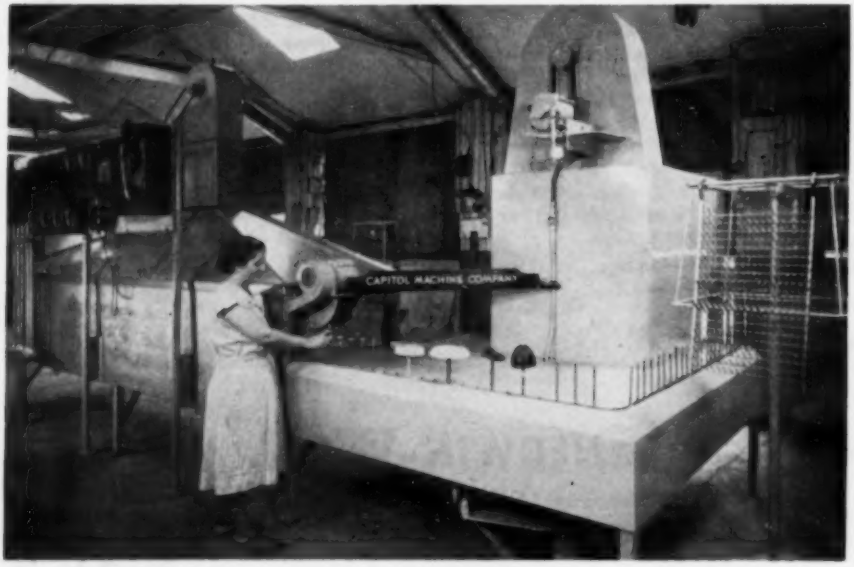
Recommended for speedy, high quality production, and exceptional savings in coating pieces of various sizes and shapes that are difficult to handle.

Let us make a test run of your own work samples—for time study and cost analysis—no obligation.

THE CAPITOL MACHINE CO.
DANBURY, CONN. **Tele. Danbury 3-2758**



View of booth showing automatic spray guns — lower view shows conveyor arrangement and drying and baking compartments.



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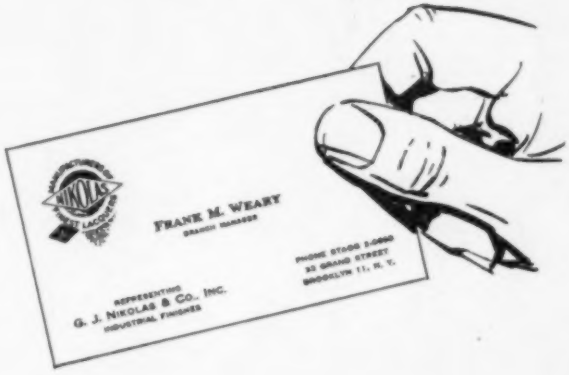
SINCE 1890

Your Introduction to FINE FINISHES



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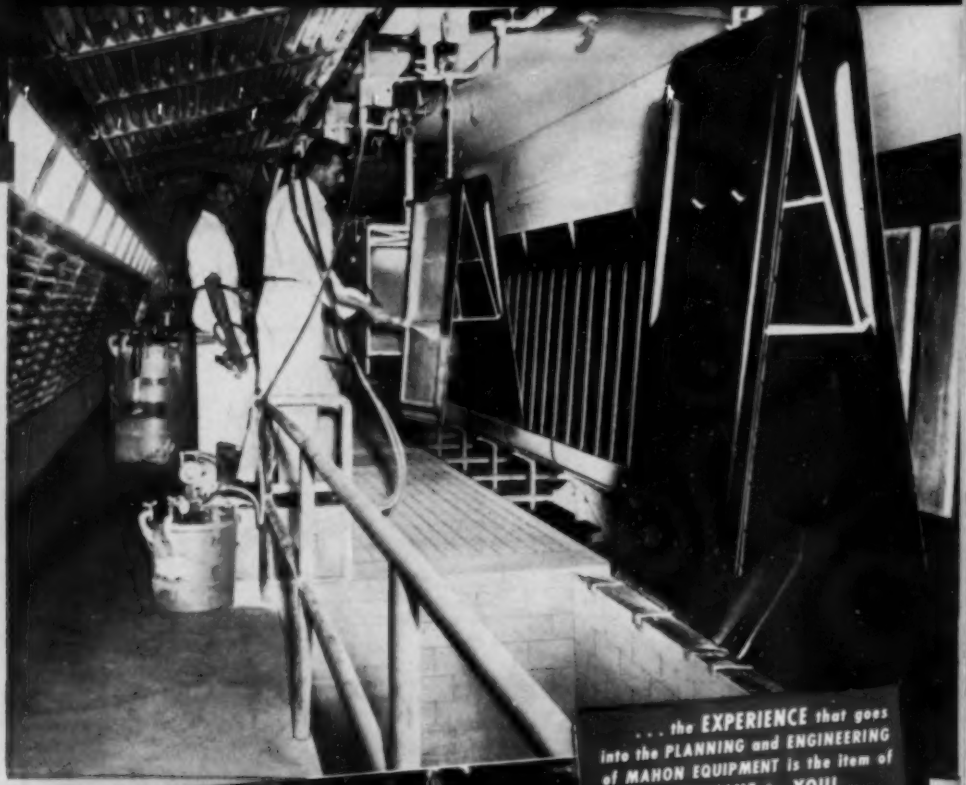
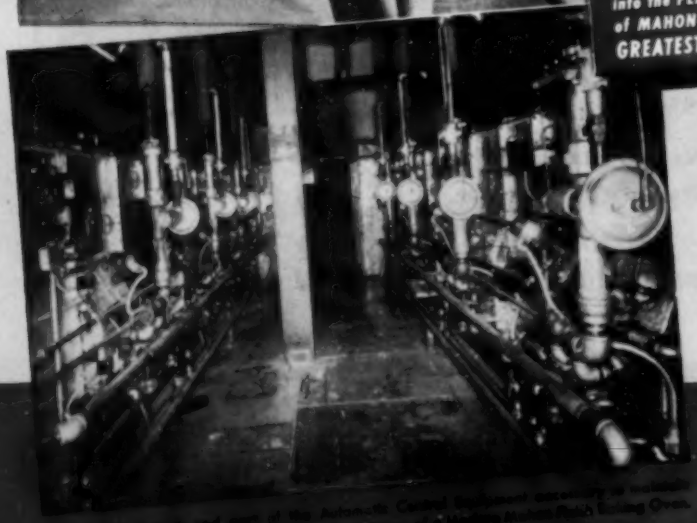
COMPLET



. . . the **EXPERIENCE** that goes into the **PLANNING** and **ENGINEERING** of **MAHON EQUIPMENT** is the item of **GREATEST VALUE** to **YOU!**



Above at right you see a general view of this new Mahon installation showing the Air Supply System located overhead in the foreground and bottom entrance Finish Baking Ovens located overhead in the background. Directly above is a view of the interior of a typical Mahon Hydro-Filter Spray Booth. Note the "Hydraire" Flood Sheet and "Microfusers" which permit perfect control of air flow in the working area of the spray booth.

M

E

Finishing

SYSTEMS

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Modern MAHON EQUIPMENT Pays Dividends in FINER FINISH at Lower Cost, less Maintenance, and BETTER WORKING CONDITIONS!

Production Finishing Equipment is constantly being improved . . . new developments such as the Mahon Fire-Jet solution heating units for cleaning and rust proofing equipment, better control of air flow in the working area of the Mahon Hydro-Filter Spray Booths, improved Flow-Coaters, automatic and conventional Dip Coaters, better automatic control of heat stages in Mahon Finish Baking Ovens, new Vacuum Booths, and many other improvements which are the result of constant research and development carried on by the Mahon Company in search of better methods which result in finer finishes at lower cost. The equipment illustrated here was recently installed in the plant of one of the world's largest home appliance manufacturers . . . it is ultramodern in every respect. If you are contemplating new finishing equipment, you will find Mahon engineers are better qualified to determine your equipment requirements and to plan and produce the most efficient production finishing equipment available today . . . equipment which will prove to be the most economical from a standpoint of maintenance and operating cost. Remember, Mahon has pioneered in this highly specialized field for over thirty years . . . remember, also, that more automobiles and more home appliances are finished in Mahon Finishing Systems than all other types combined. See Sweet's Plant Engineering File for further information, or write for Catalog A-653.

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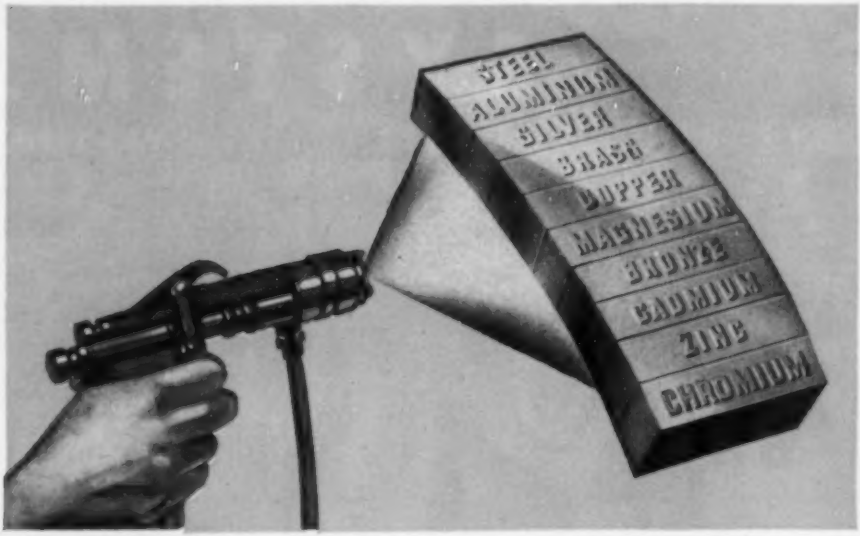
Engineers and Manufacturers of Complete Finishing Systems—including Metal Cleaning and Pickling Equipment, Metal Cleaning and Rust Proofing Equipment, Hydro-Filter Spray Booths, Filtered Air Supply Systems, and Drying and Baking Ovens; Core Ovens, Heat Treating and Quenching Equipment for Aluminum and Magnesium and other units of Special Production Equipment.

AHON



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DULAC Clear Universal Lacquer #462—a *single* water-white lacquer with remarkable adhesion to practically *all* metals. Finishing shop after finishing shop* reports that this M & W lacquer can be applied with *equal* success to just about any metal—and that it's invisible when applied. AND . . . tests conducted by an unbiased laboratory show that DULAC #462 withstands salt spray and weatherometer tests for longer periods than ordinary lacquers.

DULAC #462 forms a tough, lasting protective film that resists heat, cold, weather, stain, perspiration. It cuts *inventories*, because one lacquer handles so many metals. It cuts *production time*, because it dries out of dust in 5 to 10 minutes . . . hard in an hour. Applied by spray or dip.

*Names on request

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For complete information, write for Technical Data Bulletin #110.

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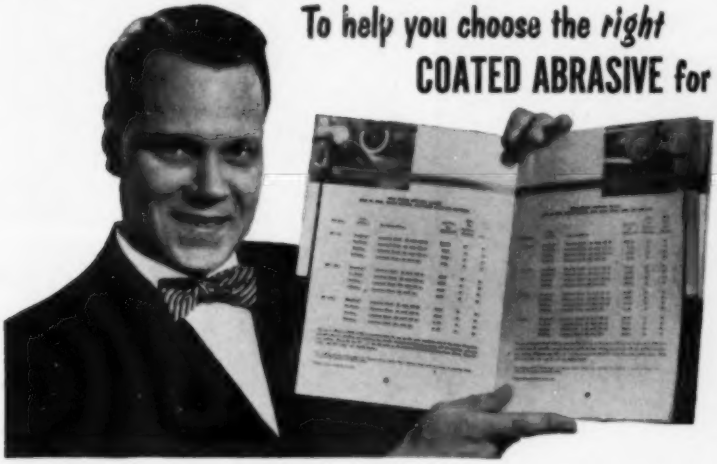

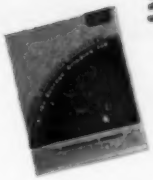

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Woodworking: *Hand and machine sanding and finishing;* machine sanding of all types; portable belt sanding machines.

In addition you'll find full information on contact wheels of all types, and on the economical "61" Port-A-Belt grinding attachments.

With this new catalog you can easily select the right belt, disc, or cut sheet for any machine or hand abrasive operation—on metals, non-metallics, or wood.

The recommendations given are *complete*—including grain sizes and types, backings, coatings, product sizes, prices and packaging information. You'll also find a useful section telling who manufactures machines used with coated abrasives, and listing model numbers and belt sizes.

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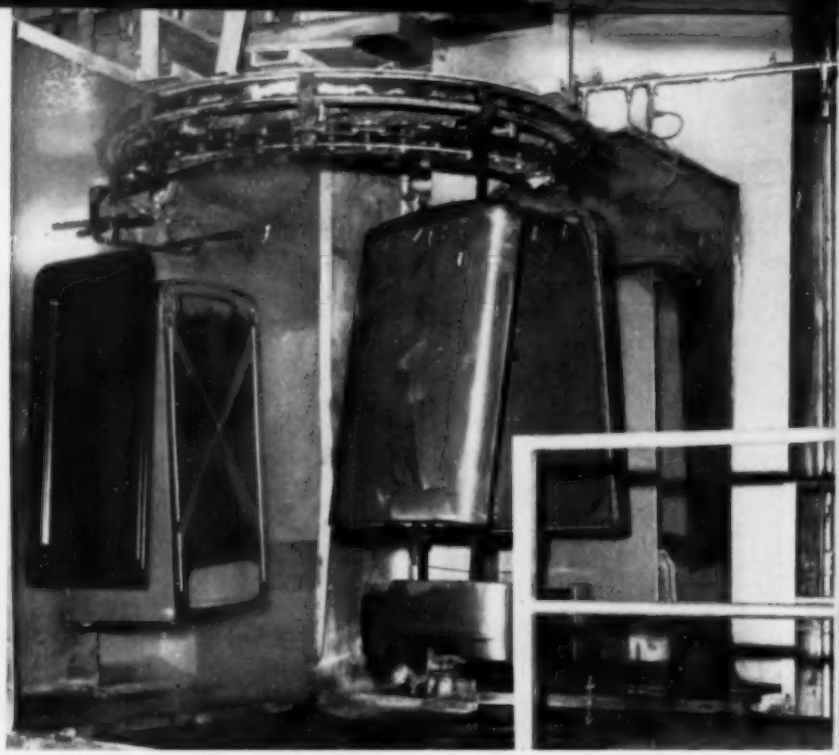


The Crosley Refrigerator Finish

ONE of the prime sales points of the present day household refrigerator is its gleaming white finish. Production of this fine finish, with its quality standards, is one of the most important operations in manufacturing refrigerators. Facilities for applying and baking the finish represent a large investment. Selection of efficient methods and suitable equipment can mean the difference between an economical or a costly job.

Our metal cleaning and surface preparation conveyor is an overhead monorail with trolleys on 24-in. centers and hangers on 48-in. centers. The conveyor operates through a

By D. C. Williams, Asst. Works Mgr. and E. L. Faneuf, Chief Chemist
Crosley Division of Avco Manufacturing Corporation

variable speed drive which gives a maximum speed of 23-ft. a minute. In loading the conveyor, a definite pattern is followed. Two refrigerator doors and two lower panels are hung on one rack. The next rack contains one cabinet and one plastic liner. This is followed by two doors and two lower panels, etc.

How We Solved the Problem Of Surface Preparation

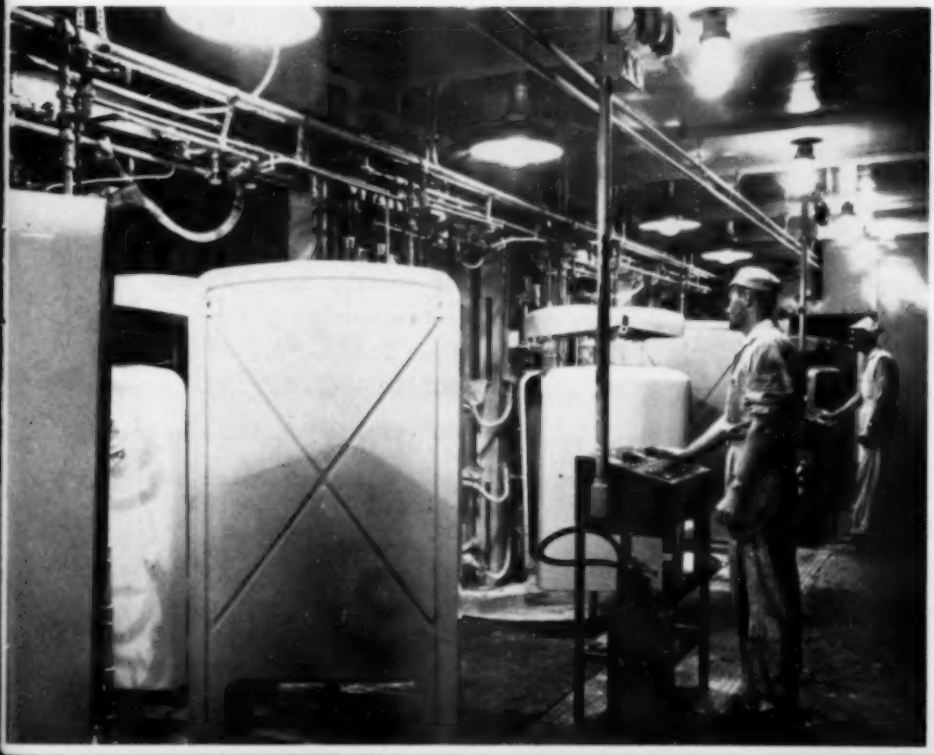
Our problem in metal cleaning and surface preparation was made more difficult by the hard water here in Richmond, Ind. The city water has a hardness of approximately 17 to 20 grains, or from 300 to 380 parts per million solids. The standard 6-stage metal washer did not condition parts satisfactorily by our high quality standards.

At times, under humidity conditions, small blisters would form in the paint film on the top surface of cabinets and doors. This was found to be due to a carry over of the solutions from one tank to another, especially in the fifth and sixth stages. In leaving the sixth stage, drippings from the conveyor chain would slightly contaminate the surface and eventually allow a premature breakdown of the enamel film under humid conditions.

(Continued on page 24)

At left (opposite page) refrigerator parts are leaving the sixth stage of power washer and entering the seventh stage where demineralized water is used to further remove all traces of the various solutions, and to neutralize the effect of extremely hard water.

Below: Two electrostatic spray booths, each with push-button control for spray gun carriages.



Demineralized Water Spray Used in Seventh Stage

To eliminate this new trouble we installed a seventh stage in which demineralized water is sprayed all over the parts. Also, at the exit end of the sixth stage, we installed a steam nozzle to blow off excess solution from the conveyor chain. There is a 30-second time lag between the sixth and seventh stages to allow parts to drain as much as possible.

Two demineralizers are used; they have a total capacity for treating 350 gallons of city water per hour. This demineralized water, having a hardness of less than one grain per gallon, is sprayed over the refrigerator parts at a temperature of 120° to 140° F.; then it drains down into a 450-gallon tank which has an overflow. Water in this tank is checked daily and tests 50 to 175 parts per million solids, most of which is chromic-phosphoric acid.

At the end of each day the contents of the tank under stage six is drained and discarded. Then this tank is refilled with water from the tank under stage seven. If the extremely hard city water were used instead of our demineralized water, a greater quantity of chromic-phosphoric acid would have to be added to keep the ratio between free acid to total acid below one to five.

The seventh stage, wherein water is piped directly from demineralizers, solved our problem. We clean and treat a total of 150,000-sq.ft. of metal surface per 8-hour shift. The accompanying table will give you the details of the metal washer:

The parts leaving No. 7 stage are conveyed up an incline to the drying oven where they are dried for about 15 minutes at a peak heat of 300° F., in a direct-fired gas oven.

At this point all parts are transferred from the overhead chain conveyor to a floor level, vertical-spindle conveyor which has spindles on 56-in. centers. This variable speed conveyor operates, at times, as fast as 24-ft. per minute. The parts are blown off and tack ragged as they are placed on the spindle conveyor. Here again, a definite pattern of loading is followed. One unit sequence consists of a single cabinet, followed by a single cabinet, and on the third spindle, two doors and two lower panels. Obviously, this loading pattern is based upon the needs of the assembly line. [*To page 26*]

1) Alkali and emulsion	160° to 190° F.	40 seconds
2) Hot water rinse	150° to 160° F.	23 seconds
3) Hot water rinse	130° to 150° F.	23 seconds
4) Zinc phosphatizing solution	125° to 140° F.	40 seconds
5) Hot water rinse	120° to 130° F.	23 seconds
6) Chromic-phosphoric acid	120° to 140° F.	23 seconds
7) Demineralized water	120° to 140° F.	10 seconds

painting?

See what Ransburg can do for you

Our electrostatic coating processes may provide you with increased production and higher quality finish at a fraction of your present painting cost . . .

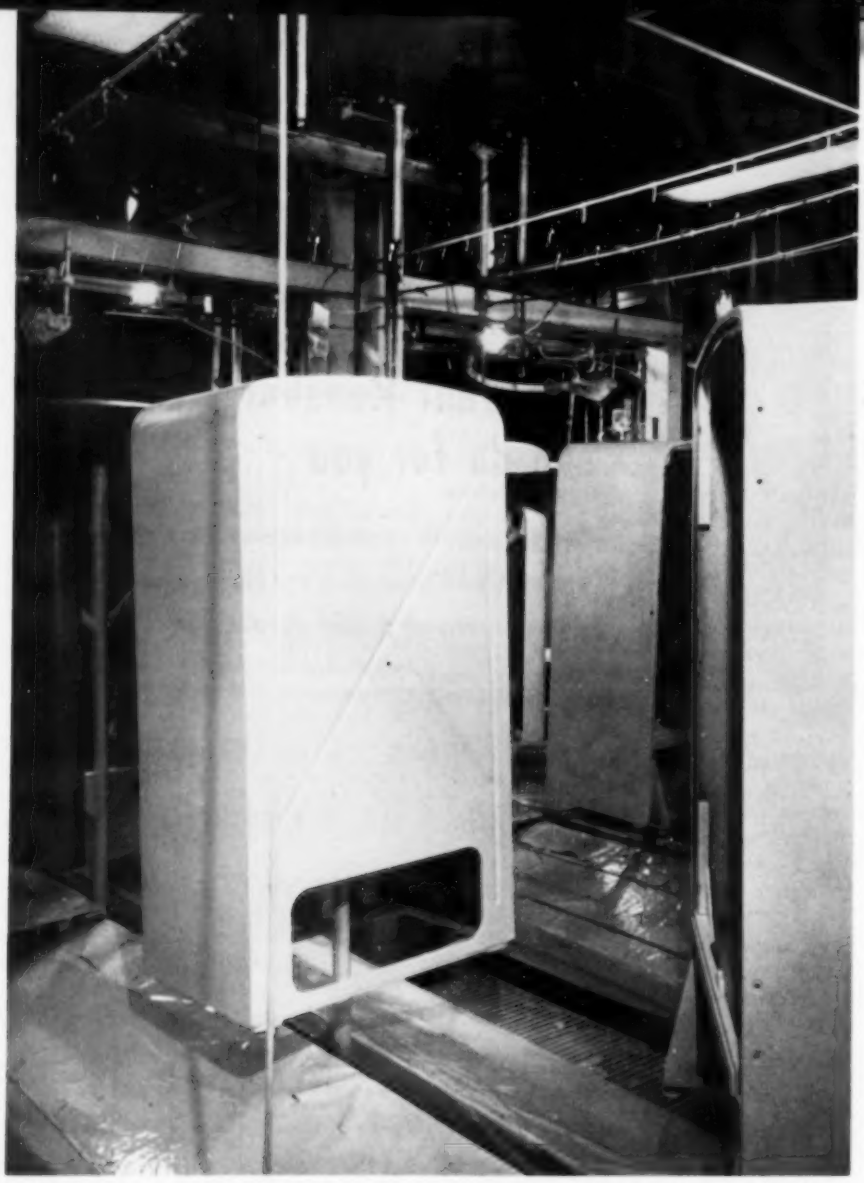
- RANSBURG NO. 1 ELECTRO-SPRAY
- RANSBURG NO. 2 ELECTRO-SPRAY
- RANSBURG ELECTROSTATIC DETEARING

If your production volume justifies conveyorized painting, we invite your inquiry to permit evaluation of the savings which can be yours with one of these processes. Write or call for information.

RANSBURG ELECTRO-COATING CORP.

Indianapolis 7, Indiana

RANSBURG



Cabinets mounted on spindle conveyor entering the second electrostatic spray booth.

The spray room, which has two electrostatic spray booths, three touch-up spray booths and a 7-ft. long infra-red electric oven, is pressurized. That is to say, a greater volume of filtered air is injected into the room than the exhaust fans remove. The air forced into the pressurized spray room passes over steam coils, through two banks of replaceable glass wool filters, then through the electrostatic precipita-

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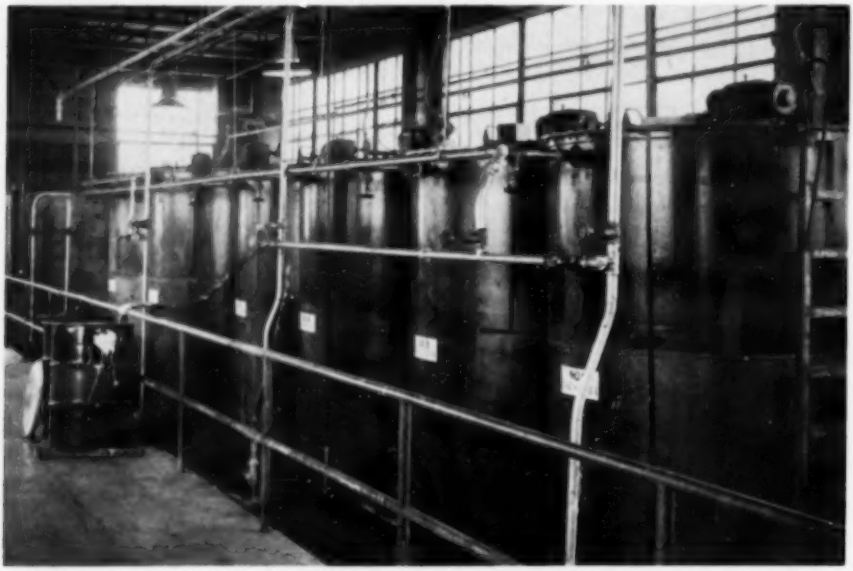
tors, and enters the spray room through a bank of filters to aid in evening the distribution of air flow in the spray booths.

The air flow across the face of each spray booth is at the rate of 100-fpm. The direction of this air flow is from the front to the back of the booth, with no cross air currents. This is highly important in electrostatic spraying. The temperature in the spray booth does not go below 80° F. during cold weather; however, during the summer months, the temperature sometimes rises to as high as 90° F.

In order to uniform the temperature of phosphatized metal that enters the spray booth, these parts pass through an infrared tunnel. Clear heat lamps, set in gold-plated wide-angle reflectors, raise the temperature of the refrigerator parts to 100°-110° F. This is just another step we take to remove some of the variables and to thereby promote more uniformity in the finish. This bank of infrared heat lamps was found to be necessary due to the changing conditions of painting parts that are at factory temperature and parts that are still warm from the dry-off oven.

As an added precaution in removing any dust or foreign particles, we have put, at the entrance to the infrared tunnel, an air jet which automatically blows all parts clean as they enter the spray booth. This is in addition to the hand blow-off and tack ragging operations. [*To p. 30*]



This section of central paint supply room contains four 1800-gallon and two 3000-gallon tanks, all used for storage of enamel. Gauges, shown at extreme left background, indicate the number of gallons in each storage tank. Enamel is pumped into these tanks from tank trucks, and from these tanks into the mixing tanks, which appear in another illustration.

MIBK

The No. 1 medium-boiling solvent for nitrocellulose lacquers . . . for vinyl lacquers

For over-all performance and economy in lacquer formulation there is no substitute for methyl isobutyl ketone, because only MIBK has the solvent characteristics which permit formulating at top diluent content or top solids concentration.

And you need not tie up your bulk storage with extra solvents. Standardize on MIBK . . . the superior medium-boiling solvent for both nitrocellulose and vinyl lacquers.

MIBK is one of Shell's *quality* solvents which include among others MEK, MIBC, and IPA. Your Shell Chemical representative will be happy to discuss with you in detail the advantages to be gained from using MIBK in your lacquer formulations. *Just phone or write.*

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Moving Guns Spray Paint In Electrostatic Field

Refrigerator parts enter the electrostatic spray booth and pass through a 110,000-volt electrostatic field. Seven spray guns operate as the parts go through the electrostatic field for the first coat. At the rear of the spray booth, parts make a hairpin turn and, as they emerge through the field, five spray guns operate to complete the first coat. These spray guns are divided as follows: One reciprocating gun, operating in a horizontal plane, sprays the top of cabinets and lower panels. Two gun carriages, one on each side containing two guns each, reciprocate in a vertical plane; and two fixed guns at floor level spray the under surface of cabinets and doors. The two floor level guns do not operate on the return trip out of the booth, as the under surface receives only one coat.

Refrigerator parts passing through a short infrared tunnel where metal temperature is uniformed to about 110° F. Clear lamps are set in wide-angle gold-plated reflectors.

In the second electrostatic spray booth the operation is identical, with five guns operating on the trip in and the same five on the return out of the booth.

The speed of the reciprocating action of the gun carriages, as well as the length of the stroke, is set by hand. An electric control board operates pre-set cams which control the length of time the guns operate. This control board is operated to properly coat 7-ft., 9-ft., 10½-ft., and 12-ft. capacity refrigerator parts.

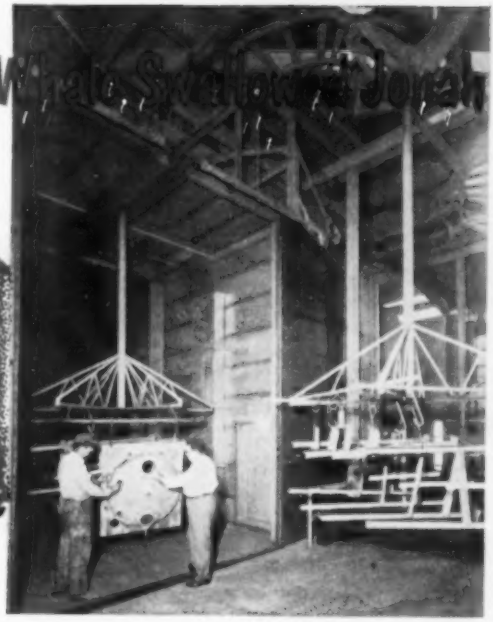
White Alkyd Urea-Resin-Base Synthetic Enamel is Used

White alkyd urea-resin-base synthetic enamel, having a viscosity of 40 to 42 seconds at 80° F., as measured in a No. 1 Zahn cup, is sprayed —using an atomizing pressure of 18 to 20-lbs. and a fluid pressure of 2 to 4-lbs. An air dry period of 50 seconds is allowed between the first and second coats of enamel; also, a six minute flash period is allowed after the second coat, before parts enter the bake oven.

Tests show that we obtain one mil of dry film thickness on the first coat, and one mil plus on the second, making the average dry film thickness better than two mils on the completed job.

After parts have been painted electrostatically, they move into an

PD—and the Whale Swallowed Jonah



This PD Finishing System Can "Swallow" Parts Up To The Size Of A Small Tank Car!

In this important plant an efficient, yet space-saving, Painting Unit was required to handle parts of varying sizes—small to enormous. It had to have capacity. Peters-Dalton Engineers solved this need—laid it out with an overhead conveying loop installed at a height that left close to 20 feet for parts-passage. In spite of its vast size, this complete PD Finishing Installation incorporates all the features that are included in systems handling average sized products.

PD engineering experience and production ability insures thorough analysis of your problems. Any type Finishing Equipment can be designed for your special requirements . . . efficiently, trouble-free. Ask for catalog or we'll be glad to tell you more if you—write, wire or phone.

Hydro-Whirl Paint Spray Booths *Industrial Washing Equipment*
Drying and Baking Ovens *Hydro-Whirl Dust Collecting Systems*

PD Peters-Dalton INC.
17916 Ryan Road • Detroit 12, Michigan

The arrow points to the approximate location of Jamestown Finishing Products Inc.'s research department, the pride and joy of our new modern plant. Here a 20-man team of research chemists keeps careful watch over the quality of AVALEX (trade name for our line of lacquers, enamels, varnishes and stains). Since 1911, the accent has been on research at Jamestown, to keep our finishes the standard of quality for the industry. Our facilities are at your disposal. Let us help you with your finishing problems.

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TRADE NAME FOR THE SUPERIOR QUALITY LACQUERS, ENAMELS, VARNISHES, STAINS AND OTHER INDUSTRIAL FINISHES MADE BY:

BETTER FINISHES THROUGH RESEARCH
ESTABLISHED 1911

JAMESTOWN FINISHING PRODUCTS, INC.

JAMESTOWN, N.Y.

adjacent pressurized spray room where three reverse position water curtain booths are available for hand spraying—touching up the inside lower panels, rounded edges of doors and cabinets, and recessed areas.

Below and outside the spray room is a pit which holds 10,000 gallons of water, plus an alkaline agent to assist in collecting the sludge from the water wash section of the spray booths. Collected sludge is skimmed off at regular intervals and sent out to be reclaimed.

The 2-coat enamel system is baked in a direct-fired gas oven for a period of 23 to 30 minutes, at a temperature between 290° and 310° F., depending upon the speed of the conveyor. Due to the large accumulation of solvent fumes in the first part of the baking oven, we have facilities for exhausting fume-laden aid to the outside, along the first quarter section of the oven in order to prevent any possibility of discoloration due to fumes. The air make-up that supplies the burners is withdrawn from the filtered air supplied to the hand spray booth.

Paint Storage; Paint Circulating Systems

Enamel is supplied to the spray booths from a central mixing room, through a paint circulating system. The paint mixing room and paint storage room are located in a separate fireproof building. The storage room contains four 1800-gallon tanks and two 3000-gallon tanks. A 4000-gallon tank for solvent is buried underground. [*To page 34*]

Six 220-gallon tanks in central paint supply room. Three tanks are used for supply while the other three are used for mixing. Each tank can be used for mixing or supply service.

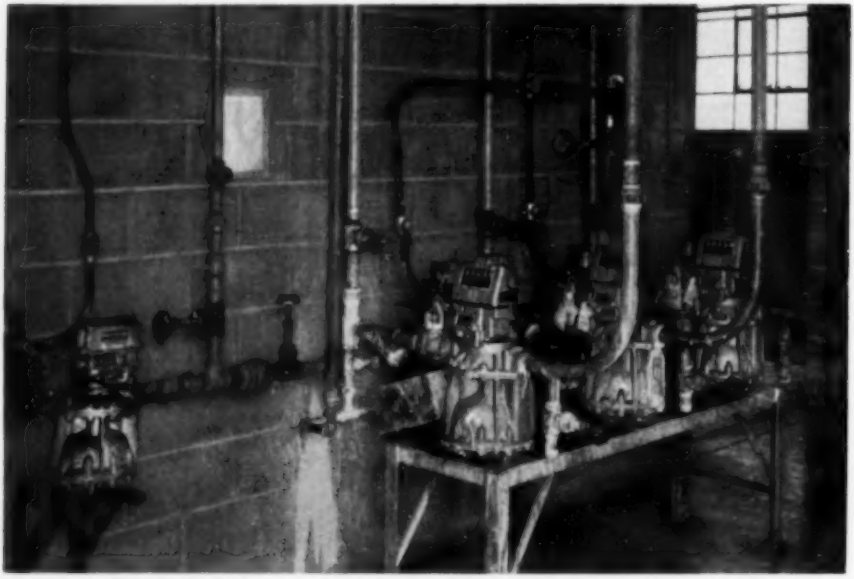
Paint and solvent are pumped from storage tanks through meters into six mixing tanks located in the adjacent mixing room. All paint is filtered through two thicknesses of silkalene cloth before entering the mixing tanks. After being thoroughly mixed, it is circulated to the paint filters, then to spray booths; the excess is returned to the circulating or mixing tanks.

Three circulating systems are required to handle our paint—one for the first coat which contains a percentage of sludge enamel, one for the second coat material in the electrostatic section, and one for the high viscosity enamel used in the hand spray section.

The usual procedure followed in the mixing room is to circulate out of three alternate tanks while mixing in the other three tanks. All of the storage tanks, totaling 13,200 gallons capacity, are blanketed with CO_2 supplied from an automatic system. The mixing tanks, when not in use, are also blanketed with CO_2 from another system.

All enamels and solvents are delivered to the plant in tank trucks, and pumped directly from the tank truck into storage tanks.

A series of gauges indicate the quantities of paint in large storage tanks. The mixing and storage rooms are maintained at a temperature of 85° plus or minus 5° F. As all materials are handled entirely in pipelines, there is no evaporation of oils or solvents, no spillage on the floor, and the fire hazard is materially reduced. [END]



Meters show quantity of enamel and solvent pumped from storage tanks into mixing tanks.

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CHEMICALS TO CLEAN and PREPARE METAL for PAINTING

Surphos CLEANER and PRODUCER OF PHOSPHATE COATINGS.

Sol-Klean PHOSPHORIC ACID RUST MOVER AND ETCHER.

Industro ALKALI CLEANERS, STRIPPERS and AIR WASH COMPOUNDS.

Industrosolv SOLVENT EMULSIONS FOR SPRAY WASHING MACHINES.

SOL-KLEAN prepares steel and aluminum for painting, removing rust, oxide and oil. It etches the metal and gives a thin phosphate coating. One volume of Sol-Klean, diluted with 3 volumes of water, usually brushed on the metal at room temperature. It penetrates oil and dissolves rust. Sol-Klean is removed together with the dissolved oil and rust by wiping with rags or flushing with water. Metal may also be cleaned and treated by immersion in hot Sol-Klean and rinsing in water. Sol-Klean is non-inflammable and evolves no toxic or corrosive fumes.

SURPHOS cleans and produces a phosphate coating on sheet steel, machined and cast iron. It anchors the paint finish and increases its humidity and salt spray resistance. Use hot (one ounce per gallon solution) in Power Wetting Machine or dip tank. Acid proof equipment not needed.

NOTE:
Consult Us On Your Government Specification Requirements

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Photograph, courtesy of Binks Mfg. Co.

Catalyst Spraying

Because of the speed with which paint sets and begins to "cure" after catalyst is added, the two are not blended until the finely atomized mist spray of paint is leaving the nozzle of a spray gun, as shown in this picture.

BY W. BEACHAM

BEFORE WE TAKE up the new catalyst spray gun, let's discuss, for a few minutes, just what the operation is:

Standard air-drying paints have drying oils added so that oxygen in the air will "burn" the drying oils which are mixed with the body of the paint (the resins), to produce a tough flexible film. This is known as oxidation. The drying oils, in this instance, can be roughly called the "curing agent." With baking enamels the different resins require a specific temperature for a given length of time to cure the resins; if you use a baking temperature that is too high the resins will be overcured and become brittle; use a temperature that is too low and you will get a soft finish, which means that the resins have not been cured sufficiently.

For several years we prepared certain types of finishes and then, before spraying, we mixed, with the finishing material in the pressure tank, a curing agent which starts a chemical reaction in the paint to "cure" the finish, to produce a hard, durable, weather-resistant coating.

Curing Agent Was Formerly Mixed With Paint

The curing agent, when mixed with the paint, takes a specific length of time to cure or harden the paint. Some curing agents act more rapidly than others; let us say that one curing agent requires one hour to cure the paint. In one hour the paint in that pressure tank would become too heavy to spray; and, in a very short time, it would harden. We might say that "with this material the pot life is only one hour."

[*Continued on page 38*]

READ HOW PELRON SOLVED FOUR DIFFERENT PAINT STRIPPING PROBLEMS!

1 PROBLEM: Stripping of tough Epon base enamel from washing machine parts.

SOLUTION: Although Epon base enamels were virtually impossible to strip, Pelron developed its Unisol 503 especially for this purpose. It is a cold paint stripper which now strips rejected parts quickly and economically.*

2 PROBLEM: Stripping glyptal type varnish from transformers and fluorescent light ballasts.

SOLUTION: Pelron completed a thorough study of the problem and designed a stripper which removed the varnish and allowed for easy, economical revarnishing of the coils immediately after stripping.*

3 PROBLEM: Difficulty in stripping enamel from automotive steering wheels without damaging hard rubber base.

SOLUTION: Any injury to the base of the wheels made it impossible to repaint them. Thus Pelron found that the same stripper developed for problem No. 2 did the work quickly and economically.*

4 PROBLEM: Stripping protective lacquer from automobile bumpers.

SOLUTION: Automobile bumpers, due to metal restrictions, have been coated with a protective lacquer which was hard to strip in case of rejects. Pelron research found a product to cut the lacquer easily and made stripping a routine operation.*

**Complete details will be furnished on request.*

NEW!

FINISHING BULLETIN

Send for your free copy of Pelron's new bulletin for the finishing industry. It contains all pertinent data on Pelron cleaners, phosphating compounds, paint booth compounds, and paint strippers. Also complete descriptions of interesting, profitable applications of Pelron products to specific jobs. Get your copy today.

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Industrial Oils and Chemicals for Better Production at Lower Cost

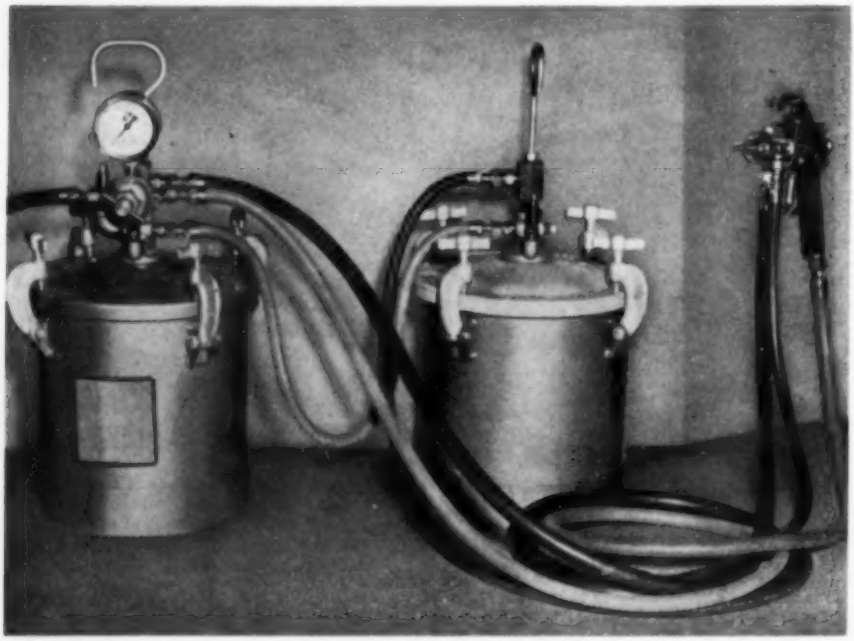
Some curing agents, when added to the paint, cure too fast to be practical; they must be added at the point where compressed air breaks up or atomizes the paint after it leaves the spray gun.

Now It's Mixed With Finely Atomized Paint Particles

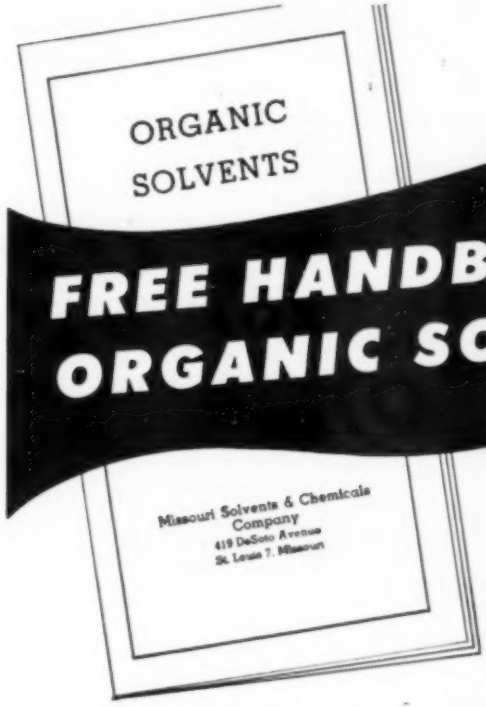
Certain curing agents are not compatible with solvents in the paint. In other words, such a curing agent will not mix with the particular solvent or liquid resin but will cure and solidify the resins when mixed with the finely atomized spray particles. This curing agent has had the name "catalyst" tacked onto it and a special spray gun must be used to apply the paint and the catalyst together. To do this a catalyst spray gun was developed which is a standard ——* spray gun body.

The head of the catalyst spray gun is fitted with a standard atomizing and material nozzle for spraying paint. From the side of the gun head a small protrusion holds a special stainless steel nozzle which has a controlled size orifice equipped

*Name on request.



A typical set-up for connecting new type spray painting gun to the tanks for supplying the paint and catalyst. The tank with the pressure gauge holds the paint; the other holds the catalyst. Notice the hose connecting the two material tanks. Because of this joint connection, the air pressure in each tank is identical—a very important factor in maintaining a correct balance in the flow of paint and catalyst. Photograph courtesy of Binks Mfg. Co.



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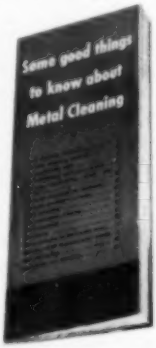

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with a needle that pulls back or releases the flow of catalyst at the same time that paint is released by pulling back the spray gun trigger.

The size orifice in a catalyst nozzle will feed a given amount of catalyst into the atomized paint just at the point where the air from the side ports or ears of a standard air nozzle start to produce a fan shaped pattern. When the operator pulls back his spray gun trigger, compressed air and paint mix just outside the spray gun nozzle; then the correct amount of catalyst feeds into the finely atomized paint, the size of the orifice in the catalyst nozzle releasing about one part of catalyst to 14 parts of paint.

Pressure Equalized on Tanks of Material and Catalyst

As you know, pressure in the pressure tank will control the amount of paint leaving the spray gun nozzle. With one standard production nozzle an air pressure of 5-lbs. on the pressure tank will force one pint of paint through the nozzle to be atomized; if we raise the air pressure on the tank to 15-lbs., we force one quart of material through the same nozzle per minute.

For the catalyst spray gun, we hook two pressure tanks together. The paint is in one tank with a pressure regulator on the top of the tank. An air hose from this tank is connected to another pressure tank that is without a regulator. The catalyst is poured into a glass container and placed in the second pressure tank. A material hose is connected from the paint tank to the material inlet on the head of the spray gun and a small acid-re-

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sisting hose is connected from the catalyst tank to the catalyst connection on the head of spray gun.

If we have about 5-lbs. of air pressure in our paint pressure tank (through connection to the air line) an equal amount of pressure (5-lbs.) will be transferred over to the catalyst pressure tank, so that at both the spray gun nozzle and the catalyst nozzle we will have equal material pressure. At a pressure of four or five pounds on the two tanks we may be spraying 14-oz. of paint with about 1-oz. of catalyst.

If we raise the pressure on the tanks to spray 28-oz. of paint per minute, the equal air pressure on the two tanks will automatically raise the flow of catalyst to feed about 2-oz. of catalyst into the 28-oz. of spray paint. In other words, the predetermined proportion of catalyst to paint remains the same. The spray gun for catalyst spraying has been developed to a high degree of practical efficiency.

Several paint manufacturers are experimenting with different resins and curing agents (catalysts) for different types of finishes. These finishes or paints are, at present, in their experimental stages. When the resin and catalyst formulas are perfected it is my belief that catalyst spraying will become popular for curing the resins of some enamels chemically instead of by high temperature drying.

Poor Adhesion Trouble?

THE CHIEF causes of poor adhesion of paint, lacquer or enamel to a metal surface are:

1) Inadequate or improper cleaning and surface preparation just before the application of coating material.

2) Use of wrong primer or undercoat—or the improper preparation or use of same.

Prevention: Make sure that metal surfaces that are to be painted or lacquered are properly cleaned and dry, and are at room temperature before the application of any coating material. If the metal surface to be coated is very smooth, highly polished, non-porous and perhaps has a naturally "greasy feel," it will probably need to be treated with a "conditioner" to produce a mild or slight etching to hold the paint or lacquer. Several brands of material are available for mildly etching or conditioning metal surfaces before painting begins — and there are metal primers to which conditioners may be added to make the coating adhere well to such surfaces as galvanized steel, smooth polished aluminum, zinc, chromium plating, etc.

Consult a qualified technical representative of your paint supplier for his recommendations — but first tell him all about what you have to paint, your shop conditions and the minimum requirements for the job. Use the coating materials exactly according to directions. If the coating is to be force-dried or baked, be sure that you follow recommendations regarding the flash or air dry time before entering oven, length of time in oven, degree of heat and humidity in oven,

FLAT OR CONTOURED PRODUCTS SURFACE FINISHED WITH PRECISION

Wrenches, pliers, screw drivers, ax heads—these and other hand tools can be surface finished most efficiently with a Clair Machine. The Model 206-A, specifically developed for this type of service, is equipped for either magnetic or mechanical holding fixtures. Providing a working surface 38" wide and buffs from 3" to 12" in diameter . . . this versatile machine operates on a principle thoroughly proved in many surface finishing operations.

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OLEAN, N. Y.

the oven ventilation, etc. If you have time, make some tests on sample pieces under ordinary shop conditions before beginning a production run.

If you are careless, indifferent or inattentive about observing each and every one of the several details mentioned here—and there are many others too—and if, as a result, you are plagued with poor paint adhesion, then you are stuck with what it will cost in time, labor and material to strip off the finish coating, clean and dry the surfaces and do the whole paint job over.

Arch Wayman District Mgr. for Coast Paint & Lacquer Co.

Arch Wayman has been appointed district manager of the north and west Texas area for Coast Paint & Lacquer Co., Inc., of Houston, Texas, according to K. W. McDowell, president.

Mr. Wayman holds a degree in chemical engineering from Texas A & M College and has been active in industrial paint business for 16 years, specializing in maintenance and engineering problems in coatings and finishes. He joined Coast Paint & Lacquer Co. several months ago, maintaining headquarters in Fort Worth.

MacDermid, Inc. Announces New Appointments

A. R. McNeil has been appointed New England Sales Manager for Mac Dermid, Inc. For nine years he was Bridgeport sales service representative. Mr. McNeil is active in the American Electroplaters Society; he has held every office in the local branch.

Richard Nyquist of the sales laboratory becomes sales service representative. Mr. Nyquist is a graduate of Michigan State College and was in the sales laboratory in Waterbury for three years.

Allen Ferguson, a chemist of Old Greenwich, Conn., has joined the sales service laboratory. Mr. Ferguson is a graduate of Baltimore City College and served in the Navy in World War II.

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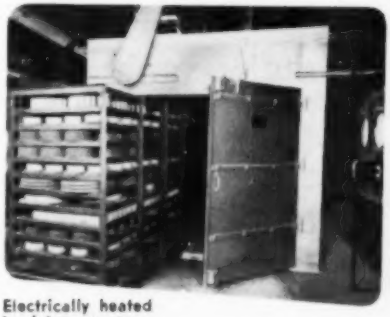

Electrically heated truck-type oven.

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Write for Bulletin 2 Today

Young Brothers Company

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Cleveland 13, Ohio

Estab. 1896

The attached "Wood Finishing and Recent Developments -- Western Electric Co." is a general summary of a talk I made on Oct. 22, 1952, at a technical sales meeting before the Cellulose Products Department of the Hercules Powder Co. at Rye, New York. It was well received and as a result I was requested to give it a repeat before the Lacquer Committee, National Paint, Varnish and Lacquer Association in Washington, D.C., at the Mayflower Hotel on Jan. 22, 1953.

H. E. Van Siclen

H. E. Van Siclen
Western Electric Co.
Kearny, N.J.

WHAT WE DID TO CUT COSTS OF FINISHING

Telephone Woodwork

IN THE MANUFACTURE of new communication equipment, (telephones) wood finishing has helped to provide fine products of attractive appearance and durable quality. Wood and wood finishing are essential in making such equipment as central office switchboards, PBX switchboards for offices and business, indoor and outdoor telephone booths, teletypewriter tables, test sets, information desks, speaker boxs, etc.

Various woods are used in the manufacture of these products; for example, mahogany, birch, maple, oak, red gum, ash, Douglas fir, pine and basswood, depending on utility and decorative needs. The general public, however, does not realize the volume of wood finishing performed in the Bell System. In the eastern area alone, woodworking and wood-finishing operations are performed by approximately 400 direct people in a manufacturing area of 170,-000-sq. ft.

For the purpose of this article, the year 1948 may be considered a normal year, that is manufacturing on a one shift basis. It also has been selected since it coincides with the finish developments to be discussed later in this article.

Analysis of Progress in Our Wood Finishing

In the application of our wood finishes, real progress has been made. We have improved our operations and made changes in the finish materials used; we have also improved the quality and physical properties of the finish film. In the past, our wood finishing operations could have been called a production bottleneck, but not so today. To give you an illustration, I would

like to show the advancement made in the clear wood furniture finishes applied to our manual and PBX switchboard equipment for the past 10 to 15 years. This can best be presented with the aid of two charts.

Our 3-Coat Rubbed Finish Required 15 Operations

In chart No. 1 there is shown the reduction of direct labor resulting from three major changes in methods and materials. On the "Y" axis we have direct labor effort in base hours for our No. 551-B type switchboards. At the "X" axis we have the various finishing systems; these include a 3-coat rubbed varnish finish, a 2-coat rubbed varnish finish, a 2-coat flat varnish finish, and a 3-coat flat lacquer finish.

The all-black bar (at the left) represents the 3-coat rubbed varnish finish. This finish consisted of 15 operations including filling, toning, dusting, spraying, sanding, rubbing, touch-up and pack and ship. It was felt that by engineering and study we could reduce the labor effort in some of these operations.

An investigation was started and, as a result, the 2-coat rubbed varnish finish was developed and placed in full production. This new finish reduced the number of hours formerly required for the 3-coat rubbed varnish finish; it provided a reduction of 24% in labor effort. One sanding and one spraying operation were eliminated; the cost of finishing material was reduced 30%, and

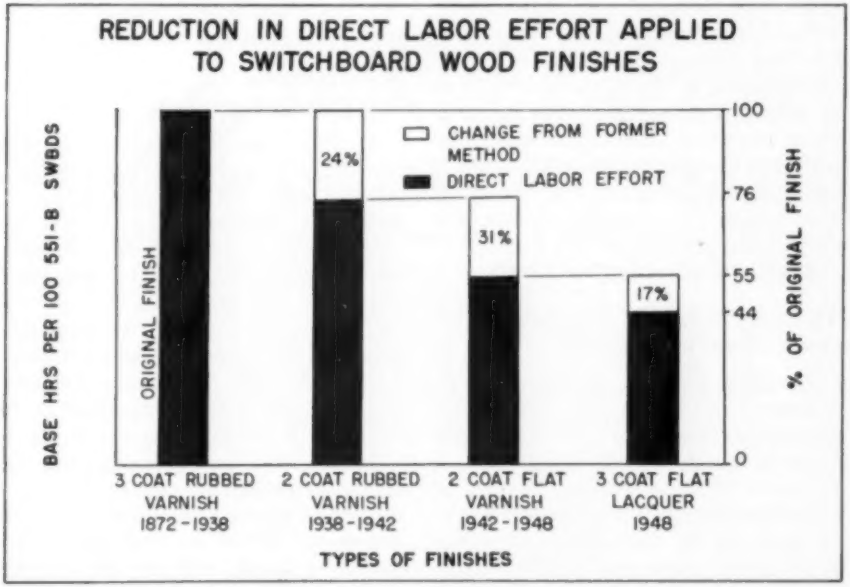

Chart 1. As technical developments and improvements in finishing materials occurred, we adopted them. As a result, we reduced the direct labor effort required to produce quality finishes on telephone furniture and woodwork.

the appearance of the new finish was comparable in every way to the original finish.

Change to 2-Coat Flat Varnish; Savings

We were not satisfied to stop here in improving our finishes. We believed it would be possible to eliminate the time of rubbing the finishes by producing a rubbed effect within the varnish itself. Joint effort with the finishing material manufacturers finally developed materials which would produce this result and retain the quality of the rubbed finish. After 1942, we were appplying the 2-coat flat varnish finishes.

This change reduced the direct labor hours 31% of the previous time. We dropped three operations —final sanding, steelwooling and rubbing. The varnish used had a China wood oil base and was better in physical properties than the previous material. The finish was more uniform in appearance and did not show up white in the corners from the application of a rubbing mixture of pumice and oil, as we had experienced with the rubbed finish.

Then to 3-Coat Lacquer; Only Nine Operations

In 1948 further improvement appeared to be possible. The solids content of lacquers had increased from a range of 15%-20% to a range of 27%-30%. Drying was at room temperature and quick. Further changes in filling and sanding techniques were also likely. Upon investigating, we were convinced of the quality and durability of lacquer finishes. As shown on chart No. 2, the lacquer finish, compared to the flat varnish finish, realized a further change of 17%.

By the use of this finishing system, sanding and filling time were reduced, the spray coat was out of dust faster, required no forced drying, decreased pin hole effects in mahogany finishes, provided greater ease in handling finished work, and the lacquer finishes are tougher and more durable. Looking to the right of chart No. 1, on the "Y" axis, there is represented the percentage variation in direct labor hours based on the original finish. You will note that we have reduced our labor effort to 44% of the original time. Where 15 finishing operations were required, there are now only nine which include a dusting operation, touch-up, and pack and ship.

We Reduced the Time of Our Finishing Cycle

During the discussion of this chart No. 1 on direct labor effort, I have left out any reference to finishing interval or time. This, by itself, is so important to our manfacturing schedules that I have presented it on chart No. 2. On the "Y" axis, on the left, is the time interval in hours per switchboard. At the "X" axis (at bottom of chart) we have the same arrangement in types of finishes as in chart No. 1.

In the first bar, representing the original finish, 107 hours were required to process the finish through the shop. When we changed to the 2-coat rubbed varnish finish, we reduced the time element to 67 hours. This provided a reduction of 37%. Further improvement, with

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the introduction of the flat varnish finish, reduced the time required to 45 hours, reducing the previous interval by 33%.

With the lacquer finish, 26 hours is required or a 42% change in time from the previous finish (2-coat flat varnish). Comparing the time of the original finish of 107 hours with that of the present 26 hours, the finishing interval has been reduced 76%. In other words, where one week was required for processing our switchboard finishes in 1938, they are now completed in less than two days.

Technique of Getting the Cooperation of Personnel

In addition to the engineering and material improvements which appear possible in any one study, it is important to have the attitude of the foreman and his workers sympathetic to trying out new methods of application and materials. Let's refer back to the 3-coat rubbed varnish finish versus the 2-coat rubbed varnish finish development. The procedure adopted to get the cooperation of the finishing shop in this study makes an interesting story.

To start with, there was in operation the regulation 3-coat varnish system. The procedure planned for the 2-coat system was established. Other procedures for altering the 3-coat system were arrived at by setting-up mahogany faced plywood panels in various states of finish, showing a number of degrees of sanding of each varnish coat. The foreman, section

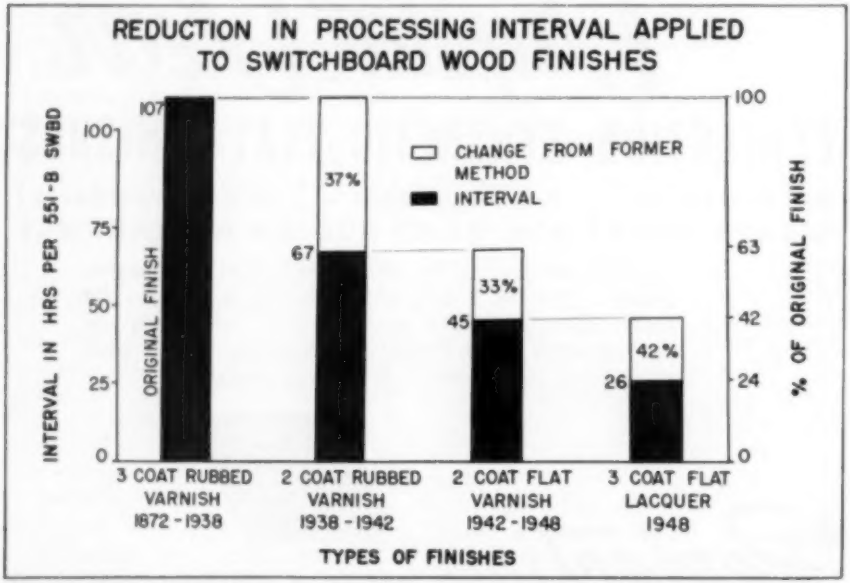

Chart 2. We reduced the time of our finishing cycle, as we made changes in accordance with new developments made available by modern finishing materials and methods.

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chief, specialty man, and time study engineer were then requested, individually and apart from each other, to indicate just how they would apply the various finish operations, and to what degree of sanding.

All operations were to be timed and the most satisfactory finish, both economically and in appearance, would then be selected from the various systems provided. By this arrangement each individual became personally interested; each one became a part of the investigation since each one felt he had the best finishing procedure.

When the pilot test panels were completed these men were invited to select the most satisfactory finish, knowing that the regular procedure, the individual's personal method, and the 2-coat system were among the exhibits. The 2-coat system proved to be the most economical and was comparable in appearance and quality to the regular finish. Consequently its introduction, as a regular shop procedure, was made easier and was accepted by all concerned.

Now We are Running Tests on Hot Lacquer

At the present time an investigation is under way to evaluate the merits and possible advantages of hot lacquer application. A review of equipment in service and of the literature on the subject has indicated two methods of application of lacquers under heat; they are paint heaters and steam spray.

For our study a paint heater with a re-circulating unit was made available. Also, a production spray gun from a nationally known manufacturer. It is felt that hot spray application for wood finishes is practical, but some application difficulties have troubled us to date.

Blistering and Lifting of Sealer Coat; Remedies

Mahogany, birch, basswood and oak are the woods finished in volume in clear finishes, and both plywood and solid stock are used.

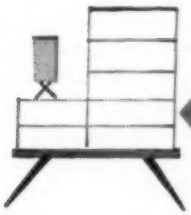
The main difficulties are blistering and lifting of the sealer coat. The experience so far is interesting. Blistering occurred on mahogany-faced plywood primarily; none showed on birch, oak or basswood faced plywood or on solid birch, or solid oak and, for all practical purposes, solid mahogany. Blistering can occur in hot lacquer, as a material, if its composition is not of a satisfactory formulation.

Investigation on a number of materials and the above tests showed that lacquers approved for our use were free of this difficulty. The mahogany filler was then checked and it is believed that the rich solvents required in hot lacquer formulations attacked the dried filler, either producing gases, releasing entrapped air or entrapped solvents. To remedy this condition, the filler composition has been altered. Two adjustments appear to be helpful: 1) Addition of China wood varnish; 2) change in solvent and oil composition used in the filler. These changes are now being planned for a pilot run.

With regard to lifting of the sealer coat there is no evidence to indicate that the various wood surfaces or fillers and stains have any detrimental effect. It appears that

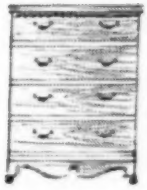
SPEAKING OF FURNITURE

What type of finish do your customers prefer?



Modern

Furniture must be distinctive. Functional design and appealing finishes are all important to attract the interest of the home maker.



Traditional

Furniture must be authentic. Grace, charm and delicate beauty lend character to this type of finish.

Both Modern and Traditional finishes are our business, since we supply finishing materials to some of the largest furniture manufacturers — and our 50 years of experience qualifies us to service the most discriminating buyers.

THE GILBERT SPRUANCE COMPANY

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STILLE'S COLUMN:

The following article appeared in the June, 1928, issue of INDUSTRIAL FINISHING:

"Mr. E. T. Stille announces 'Stille's Perma Stain' which, according to the manufacturer, is 'just what the name implies—a water stain with a permanent finish'.

Information submitted states that this new Stain:

combines the characteristics of a water and an oil stain,

is fast to light,

will not raise the grain of the wood,

dries quickly,

will not bleed through any finish,

has remarkable depth,

uniforms the variation of color in the same run of lumber,

can have filler applied directly over it without requiring a wash coat of any kind,

has deep rich color tone,

can be dipped or sprayed with equally good results,

requires no sanding."

The quality of this Stain has been maintained throughout these many years. Quality is traditional with the house of STILLE-YOUNG.

We respectfully solicit your inquiries on our Perma Stain line, or other wood finishing materials; or we will be glad to have our service man call at your convenience.

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Chicago 13, Illinois

the top-coat hot lacquer is so rich in solvents that it permits a separation of the sealer coat from the base surface due to a solvent action on the bond at the interface of sealer and wood. The older the sealer coat film has become, the more easily the sealer is lifted. This reaction begins two or three days after sealer coat application and is not uniform in its action. It is believed this can be remedied by the addition of a small percent of anti-oxident to the sealer. Results show, so far, that no lifting is obtained after two weeks. However, confirming trials are necessary at this time to assure results.

The estimated merits of hot lacquer application for finishing our wood products are as follows:

1) Savings in material estimated at approximately 15% to 20%.

2) Reduced interval of manufacture.

3) Reduction in time of finish application.

4) Finish of clarity and excellent physical properties.

5) Application of two coats in place of three coats of lacquer.

Shop trials, planned for the future, will provide us with additional information in regard to the use of hot lacquer finish for our wood products.

R. C. Bender Now Represents Clinton Co. in Indiana

Mr. Roman Bender has been appointed representative for The Clinton Co., to cover the Indiana territory.

Mr. Bender was formerly with a manufacturer of finishing materials and he is well known in his territory, particularly with the metal industry. He will make his headquarters at his home address, 1220 Leland Ave., Indianapolis, Ind.

How to Use Rubbing Lub. Easily, Safely, Sparingly

IN THE rubbing department of a certain furniture factory each rubber has, on his bench, a metal container which holds about one gallon of rubbing lubricant. They use wet-or-dry sandpaper and a lubricant made up of eight parts mineral spirits to one part of light rubbing oil.

The top or lid of the container fits inside like a piston in a cylinder and has many small holes; springs hold this perforated lid just above the level of the lubricant in the container.

When the operator needs lubricant for rubbing he places his cheesecloth pad on the perforated top and depresses the top sufficiently to force lubricant up through the small holes to saturate the pad. Of course, the farther down the top is pressed, the greater will be the quantity of lubricant forced upward through the holes, and vice versa. If only a small quantity of lubricant is needed to wet just one end or a corner of the surface to be rubbed, the operator depresses the perforated top only slightly to obtain only what he needs. The spring top or "piston head" flexes easily, yet it is stiff enough to support the weight of the rubbing pad so that the lubricant will not contact it when it is not in use.

These handy lubricant containers serve to accomplish several things. They reduce the evaporation of mineral spirits or naphtha and, what is of greater importance, they permit the

(Continued on page 95)

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SPRAY on clean booth. That's all! Perfect protection against drift.

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THERE is no better proof of the quality and performance of Pittsburgh Industrial Finishes than the continued use of these famous coatings by outstanding manufacturers.

For instance, the Forbes Finishes Division has furnished the General Fireproofing Company of Youngstown, Ohio, Pittsburgh Industrial Enamels for many years to make its products look better and last longer. Recognized as the world's largest manufacturer of metal desks and office chairs, General Fireproofing is famous also as the maker of one of the finest complete lines of steel and aluminum furniture for trains, buses, steamships, hotels, banks, and other installations.

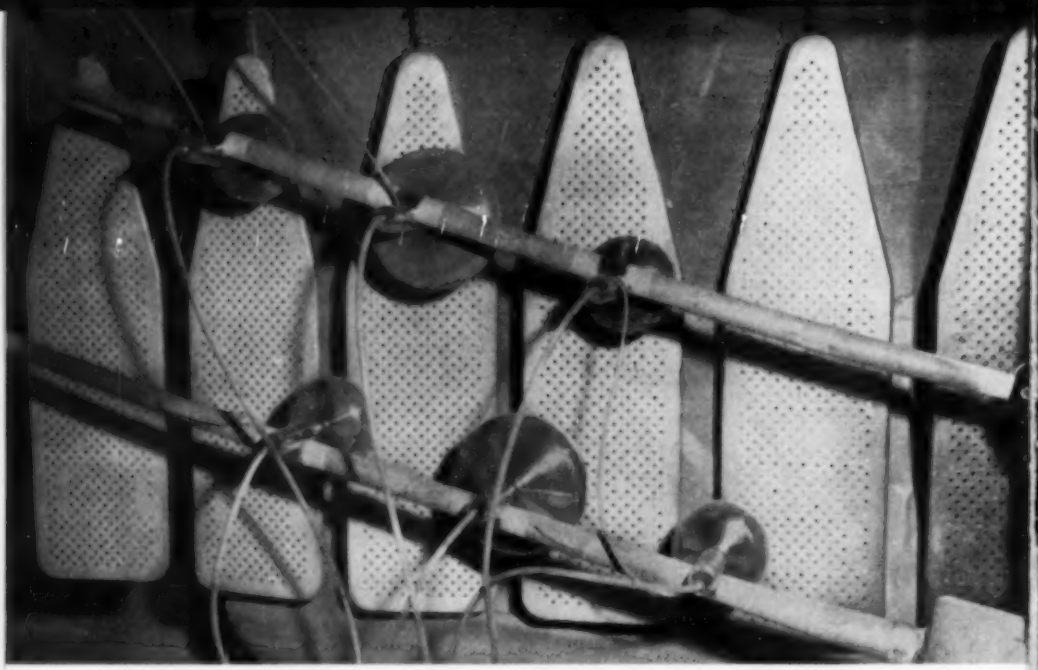
By working with GF's technical and engineering staff, Pittsburgh has produced high quality enamels to meet General Fireproofing's finishing requirements. These coatings provide exceptional adhesion, toughness, and durability. Because they are so easy to apply, they speed up production and save manufacturing costs.

PITTSBURGH PLATE GLASS COMPANY
Industrial Paint Div., Pittsburgh, Pa. Factories: Milwaukee, Wis.; Newark, N. J.; Springdale, Pa.; Atlanta, Ga.; Houston, Texas; Los Angeles, Calif.; Portland, Oregon. Ditzler Color Div., Detroit, Michigan. The Thresher Paint & Varnish Co., Dayton, Ohio. Forbes Finishes Division, Cleveland, Ohio. M. B. Suydam Div., Pittsburgh, Pa.

Free Advisory Service

General Fireproofing is just one of many manufacturers with whom Pittsburgh has worked in developing highly specialized finishes. This broad experience may be helpful in saving you time and money. Write, wire or phone the Pittsburgh Paint plant nearest you. We'll be glad to have one of our engineers discuss your finishing problems with you at no cost or obligation.

PAINTS
PLASTICS • FIBER GLASS
GLASS COMPANY



Atomized enamel, released as a fine spray of electrically charged particles flying from the inner rims of those six whirling bowl-shaped heads, is instantly attracted to the clean surfaces of the metal ironing boards. Result: A smooth protective and decorative coating of uniform thickness and quality sprayed over the exposed surfaces of the ironing boards.

Airless Spray Painting

OF METAL IRONING BOARDS

LIKE MANY OTHERS concerned with high production paint lines, we have learned the real value of the No. 2 process of electrostatic spray painting. This automatic, airless spray painting process is doing a good job on our ironing board line.

Before putting in our present installation we sprayed these pressed metal ironing boards manually. Three spray men worked in two water-curtained booths, one 18-ft. long and the other 12-ft. long. Now all of this has been replaced with two electro-spray units; we have no

BY E. A. CARPENTER
Finishing Foreman, Arvin Industries, Inc.

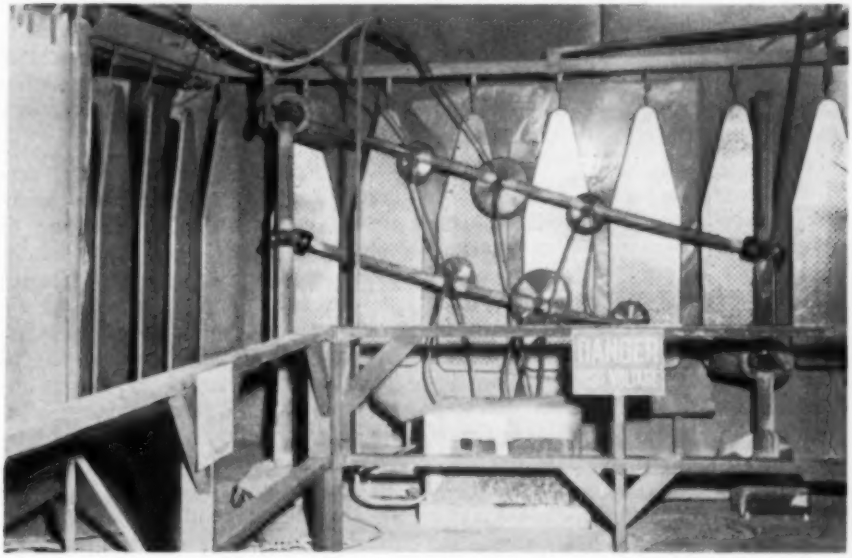
spray booths, no spray operators and no compressed air.

Airless atomization, with an electrostatic field controlling the deposition of paint on the pressed metal boards, saves more than 40% of the paint formerly needed with our hand spray operations. In addition, rejects and rework due to inconsistent painting are negligible now, compared to our previous average of about 4%. Yes, our automatic painting setup produces a uniform high quality coating that is not so dependent upon the skills and attitudes of hand sprayers.

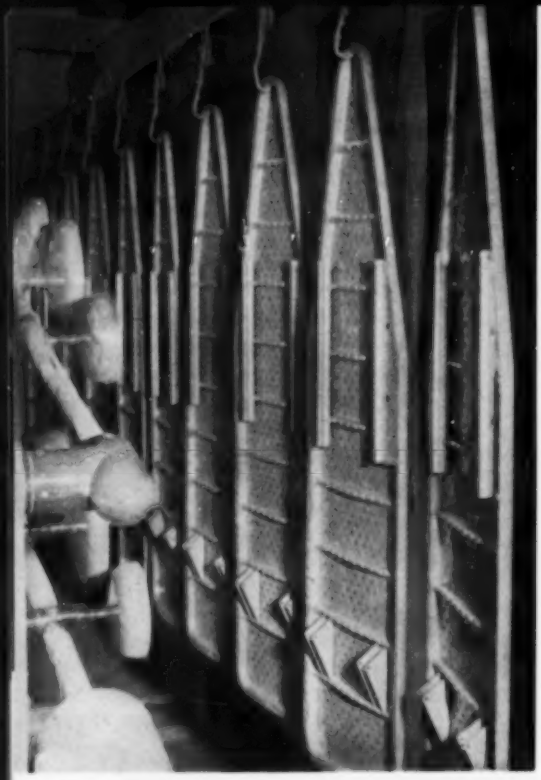
Other advantages include a reduction in maintenance and clean-up cost of about 50%; considerably less exhaust; and a saving of about 30% of the floor space formerly occupied by spray painting.

3-Stage Metal Washer Plus Dry-off Oven

All parts of the ironing table—legs, understructure and perforated boards—go through a 3-stage metal washer. In the first stage, an alkali cleaner is sprayed over the parts; this is followed by a hot water rinse. In the third stage, a chromic-phosphoric acid solution is applied. All solutions and rinses are maintained at 180° F. Right after the final rinse the parts enter a dry-off oven through which they travel for 20 minutes in a heat of 300° F. The long dry-off time is necessary to evaporate moisture trapped in the rolled edges at the ends of the boards. A rubber-tired wheel at the exit end of the washer tilts the ironing boards as they leave the machine to aid in draining, but



Another view of the No. 2 Process of electrostatic airless spray painting in operation.



The backs or undersides of boards are being painted by airless electrostatic spraying.

enough moisture remains trapped to warrant the longer dry-off period.

The parts cool as they travel for 15 minutes, whereupon the ironing boards are transferred to another conveyor. Ironing boards are suspended from this overhead monorail in a vertical position, as shown in the accompanying pictures. The legs and understructure continue on the cleaning conveyor which carries them through a dip tank, over drain pans and through the bake oven.

Ironing boards proceed by conveyor past the first electrostatic unit where the fronts or top sides of the boards are coated; then past a second unit where the backs of the boards are painted. The two units are identical. Each unit has two parallel tubular columns which support two seats of three bell-shaped atomizing heads spaced on 18-in. centers. The center head is 12-in. diameter, and the two side heads are 8-in. diameter. The heads are revolved by a fiber shaft driven by an explosion-proof motor. The heads are electrically connected to a 90,000-volt high potential unit located in an adjoining room.

Pressure Tanks; Fluid Pumps; Airless Spraying

We use two pressure tanks—a 35-gallon tank for blue synthetic enamel, and a 15-gallon tank for white enamel. Of course, only one color is used at a time. These paint tanks are located at one end of the finishing room. About 5-lbs. of air pressure is carried on each tank to force enamel through a material hose to the fluid pumps located immediately behind the electrostatic units.

The rotary type positive displacement pumps may be adjusted to increase or decrease the volume of enamel metered to the spray heads. Paint enters the bell-shaped heads at the apex, and as the head revolves, the enamel spreads uniformly over the inside surface of the head and flows to the outer edge. At this point the enamel is atomized; electrically charged paint particles travel through a 90,000-volt electrostatic field where they are attracted to the metal ironing boards suspended from the grounded conveyor.

(Continued on page 60)

SOLVENTS for METAL CLEANING

COLD WASH SOLVENTS. Over 26 cold wash solvents for metal cleaning including NEW Odorless Mineral Spirits and NEW Hi-flash, quick-dry mineral spirits. Both are Underwriters Laboratory Rated. Investigate today. Ask for samples and data.

VAPOR-PHASE CLEANING. Quality-controlled fully stabilized trichlorethylene and perchlorethylene from America's leading manufacturers. Large stocks always available. Use our quick-supply service.

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NEW ORLEANS	Southern Solvents & Chemicals Corporation
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Backboards; Exhaust for Ventilation Only

In our installation, backboards are positioned back of both units because the tapered ends of the ironing boards leave a V-shaped opening between boards. However, the small quantity of paint that does escape through these open spaces and deposits on the backboards represents the only paint loss involved. If it were not for these V-shaped openings in the line of work, there would be no paint loss and we could dispense with the backboards.

Two exhaust pipes remove synthetic enamel fumes from the room. This exhaust is designed to remove only the solvent vapor, since there is no paint overspray to be exhausted.

Preparation of Enamel; Flash Dry and Baking

One man mixes all enamel to get a viscosity of 15 seconds at 78° F., as measured in a No. 4 Ford cup. This man also makes the necessary adjustments on both electrostatic units and cleans the 12 bell-shaped spray heads with solvent at noon and again at the end of the shift.

After leaving the second electrostatic unit, ironing boards travel for five minutes to allow a flash (air dry) period before they enter an indirect, oil-fired convection oven where the finish is baked for 35 minutes at 300° F.

Although our No. 2 Process units were designed and installed to paint only the metal tops of our ironing boards, our experiments indicate that the understructure bracing and legs can be handled by the same equipment more economically than by a dipping setup. Our present line of two colors—one for the tops and another for underneath — doesn't lend itself to running this way, however, since we want to load the conveyor in unit sets to permit packaging from the baking conveyor. Thus, the automatic setup is ideal for solid color models, alternating with boards and legs on every other hook.

Airless electro-spray has given us a trouble-free automatic painting line, and we are all for it.

Schwartz Chemical Appoints West Coast Distributor

To provide faster service to the plastics industry in the western states, Schwartz Chemical Co., Inc., New York, has appointed Plastic Materials Supply Co. as its West Coast distributor.

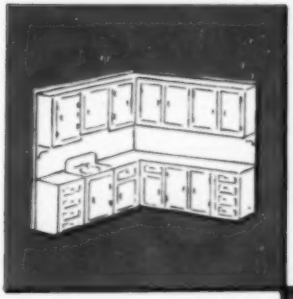
The new firm located at 9156 East Las Tunas Drive, Temple City, Calif., is headed by Jack M. Nims.

Plastic Materials Supply Co. will handle Schwartz Chemical's complete line of Rez-N-Brand products which include a variety of lacquers, coating materials and dyes.

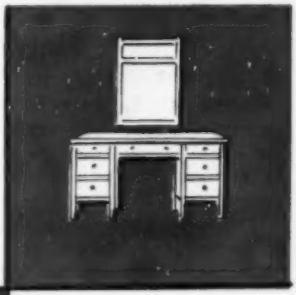
Barden Represents Standard-Toch in Ohio & W. Penna.

Walter M. Barden, Jr., has joined the Industrial Finishes Division of Standard-Toch Chemicals, Inc., as sales and technical service representative for Ohio and Western Pennsylania. He has recently completed a comprehensive technical training course in the company's laboratories at Chicago, and is well qualified to offer assistance on finishing problems to manufacturers of metal, wood and plastic products.

Mr. Barden was graduated from Loyola University with a B.S.C. degree. He spent several years in the U. S. Navy during World War II.



Duranite Enamels —ideal for kitchen cabinets—resist food acids, alkalis, soaps and grease.



Duranite Wrinkle Finishes lend distinction and wearing quality to office and industrial equipment.

Finish by

ZAPON®

Zafil® fillers, Aquanite® stains, Zaponite® sealers, and Zaponite® Lacquers—a complete wood-finishing system.

Zapak® Paper Coatings for bottle labels are non-blocking, non-yellowing; resist cracking and abrasion.

ZAPON®

"SERVICE FROM EVERY ANGLE"

Is your product made of wood or metal, paper or plastic? Let a ZAPON custom finish give it a new look. And let ZAPON "Service From Every Angle" choose the right finish, and help you work out the most effective production methods on your own finishing line.

ATLAS POWDER COMPANY WILMINGTON 99, DELAWARE

for Industrial Finishes · Stamford, Conn. · North Chicago, Ill.

Air Dry and Force Dry Wrinkle Finishes

EDITOR'S NOTE: One of the concerns to who we referred a recent inquiry for air-dry wrinkle finishes, has sent us an extra carbon copy of its reply. Since this letter contains information that may be of value to others interested in air dry and force dry wrinkle coatings, we are taking the liberty of quoting part of it as follows:

"First, we want to clarify the term 'air-dry' in connection with our wrinkle coatings. Much laboratory effort has been devoted to the development of a wrinkle enamel that could dry print-hard under normal spray room temperatures in an overnight or 16-hour average period; such materials have not been satisfactory, due either to rapid embrittlement, which we have noticed in a number of competitive 'air-dry' wrinkles, or to questionable package stability. The so-called 'air-dry' wrinkle which we now furnish to a number of top-rated manufacturers of computing and typewriter machines, motor trucks, coin-operated dispensing devices, etc., actually involves a force-dry for two to four hours at 125° to 145° F.

"The time factor is largely influenced by efficiency of drying chamber and rate of ventilation provided for removal of solvent and drier volatiles; temperature range is affected by thickness of wrinkle coating applied, temperature of surface to which applied, and the degree of film firmness required to withstand particular conditions of stacking, wrapping or

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Rust Remover and Metal Cleaner for Manual Application
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Greater production . . . superior quality . . . at less cost. That's what you'll hear wherever New Period Production Finishes are on the job. But what about your plant? Let us show you how to do more . . . and do it better.
• Fillers and Stains
• Lacquers—Clear and Semi-Gloss
• Sealers
• Lacquer Enamels—Flat and Gloss
• Synthetic Enamels
Write for 5 Gallon Working Sample at Drum Price
MANUFACTURERS OF FINE WOOD AND METAL PRODUCTION FINISHES
NEW PERIOD Production Finishes
NEW YORK WOODFINISHERS' Supply Co. Inc.
109 IMLAY STREET BROOKLYN, N. Y.

handling of finished parts. As a rule, our enamel is allowed about 72 hours after the force-dry period before work is subjected to pressure against corrugated board, crate slats or sling chains. For touch-up repairs on damaged original high-baked wrinkle surfaces, where no pressure or abrasion is likely, it sets up touch-free in a few hours at room temperature.

"This class of wrinkle finds particular application on wood, paper-base composition board, plastics, heat-sensitive alloy castings, or on equipment containing electronic accessories employing wax insulation, pitch potting compounds, heat-sensitive springs or filaments. Likewise, it is useful in refinishing machines in assembled form, where normal baking heats of 275° to 300° F. might cause sweating out of lubricants to stain or affect the adhesion of finish, or injure plastic key-caps, bearings, etc.

Wrinkle Enamel Undercoater

"A companion material . . . . is our wrinkle enamel undercoater. In numerous applications to wood, paper-base compositions and certain rough porous metals such as aluminum sand castings, we found that spraymen were piling on the wrinkle enamel in heavy coats, in an effort to compensate for absorption. The natural result was that the wrinkle developed too coarse a pattern; complete film hardening was critically retarded, and adhesion suffered. Our laboratory developed an undercoat having the same relative toughness as the wrinkle enamel, with free-sanding qualities, without spongy film texture to cause suction of the wrinkle topcoat. This undercoater may be air-dried overnight, or force-dried in the same cycle as the wrinkle . . . ."

INTENSELY WHITE DULUX finish for petroleum tanks reflects sun to keep interior temperature down...cuts evaporation losses.

BLAZING CARBON ARC and water spray help Du Pont chemists test resistance of finish formula to severe outdoor exposure.

Baked Enamel on Siding Keeps a Home Asparkle

After being finished with a special DULUX enamel, this clapboard siding goes into an oven to be baked to a hard gloss. It's a new kind of siding made of aluminum that won't warp, split, shrink, rot or rust—is lightweight, easy to put up.

DULUX makes an important contribution to the beauty and durability of this new building material. Sprayed and baked on an automatic production line, the finish is tough enough to survive hard knocks during shipment and construction. And once the siding is installed, DULUX resists weathering much better than an ordinary paint job . . . stays fresh-looking with occasional hosing down. DULUX-finished siding adds extra sales appeal to new homes.

Can a Du Pont finish help you develop or improve a product, or cut your costs? For further information, contact the Du Pont sales technician in your area, or write E. I. du Pont de Nemours & Co. (Inc.), Finishes Div., Wilmington, Delaware

Du Pont Industrial Finishes

Chemically engineered to do the job *better*

DU PONT

REG. U.S. PAT. OFF.

Better Things for Better Living
. . . through Chemistry

DUCO AND DULUX ARE REG. U. S. PAT. OFF.

BOILING WATER, applied continuously for 3 minutes! United's FORMILAC softens and whitens slightly, but white disappears in 1 minute—hardness is recovered in 15 minutes. No gloss lost.

NAIL POLISH REMOVER & PERFUME! FORMILAC softens slightly. Recovers hardness two hours after remover (or perfume) evaporates. No gloss lost.

COLD WATER! FORMILAC does not change in gloss or hardness after 4 hour exposure.

BOILING 5% SOAP SOLUTION, applied hot! FORMILAC does not change in gloss or hardness after 2 hour exposure.

ALCOHOL-WATER MIXTURE (50-50)! FORMILAC softens slightly. Recovers hardness as mixture evaporates. No gloss lost.

THESE AND OTHER TESTS prove United's FORMILAC low bake Clear Synthetic finish superior to typical furniture lacquers in performance. And, production runs show FORMILAC gives greater mileage—235 square feet per gallon compared to 140 sq. feet for a typical wood lacquer.

WRITE TODAY for complete details and a generous working sample—you'll be convinced of its exceptional advantages.

Complete Research Facilities

AT YOUR SERVICE

If you are faced with a special finishing problem, the United laboratory will gladly assist in finding a solution. These research facilities are always at your service to help make a better product.

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United LACQUER MFG. CORP.

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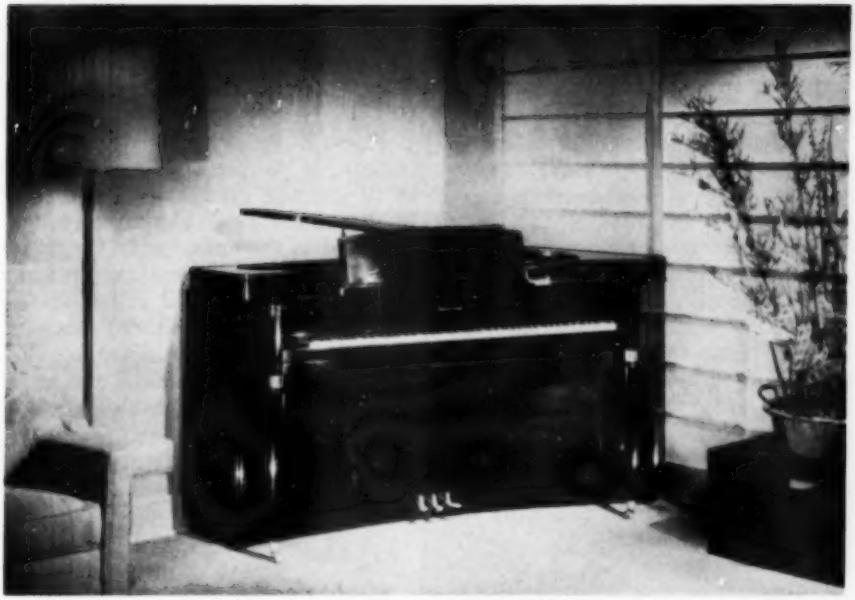

Piano finisher's Experience with

HOT LACQUER

BY JACK VAN EIZENGA
Finishing Foreman, Story & Clark Piano Co.

RECENTLY I have noticed in this magazine a number of inquiries on the subject of hot lacquer. Having used hot lacquer now for the past 18 months, I feel that we are qualified to tell some of its possibilities and merits. Up to the present time, we have not been able to find any real negative quality or disadvantages in the use of hot lacquer.

We are using three types of lacquer—clear, flat, and water white for blonds. When we began experimental work with hot lacquer, we tried several reliable brands and found that they were quite consistent as to workability and quality. Having now used hot lacquer for 18 months, it would be a terrific letdown to return to the use of cold lacquer. Following are the outstand-

ing merits we have found with this material in the finishing of our pianos:

1) It is possible that one less coat can be used by applying hot lacquer.

2) We get the real depth of finish that customers expect on a high grade piano finish.

3) Rubbing and cutting of edges by our power rubbing machines has been reduced to an absolute minimum. Drying time is no longer than for the ordinary cold lacquer, as there are less solvents to evaporate. We feel that hot lacquer has a definitely better flow quality as compared to cold lacquer, leaving no orange peel effects.

4) Hot lacquer has a definite build-up advantage, as compared to cold lacquer, on sharp edges.

We have noticed on our spraying racks that the lacquer will build-up on a ¼-in. threaded bolt to as much as ½-in. and still retain a perfect threaded shape.

Then there is the no "blushing" feature which means so much here (Grand Haven, Mich.) near the shores of Lake Michigan. We use two coats of 35% solids hot lacquer over a low-solids sealer on standard rub cases, and three coats on all of our polished cases. We allow 24 hours drying time between coats and 48 hours drying before rubbing —this latter time element being allowed because of the tremendous pressure that is applied in gluing the cases on to the assembled back of pianos.

We are using the ———* paint heaters in our system and up to the present time have never had any trouble with these units. We spray our lacquer at a temperature of 160° F.

There is one problem when changing to hot lacquer, however. That is to get the sprayers accustomed to the added weight of three hoses attached to the spray gun. We have met this problem by making a "saddle" with coil spring attached, to take some of the load off from the fluid and air line attached to the gun. It is positioned about half way between the lacquer tank and the spray gun.

Until something better is developed in the future, we are 100% sold on hot lacquers.

*Name on request.

Minbiole, Asst. Sales Mgr. of Udylite Corp.

Louis J. Minbiole has been made assistant sales manager of the Udylite Corporation. Minbiole joined Udylite in 1946 as a sales engineer in the Michigan territory. He was graduated from Wayne University College of Engineering in 1940. A year later he was awarded a master's degree in chemical engineering from M. I. T.

R. B. Waters Becomes Sales Engineer for Thompson & Co.

The appointment of R. B. Waters as sales engineer in Ohio for Thompson & Co., Oakmont, Penna., is announced.

Mr. Waters, a 1936 chemical engineering graduate of the University of Michigan, spent three years in research and production work in Chicago, and 13 years in sales engineering in Cleveland. In his new capacity, with headquarters in Cleveland, he will sell and service the complete Thompson line of industrial coatings, including electrical insulation varnishes and the new Vinsynite series of metal pretreatments.

Du-Pros SHELLAC

Strictly pure, of course, and carefully made from fine ingredients, Day's Shellac is trade-marked Du-Pros from the double process which produces the best shellac varnish.

Industrial Finishes for Application by All Methods

LACQUERS
SEALERS
STAINS
GLAZES
FILLERS
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ENAMELS

SPECIALTY FINISHES

• *IN STEP WITH THE TIMES*

JAMES B. DAY & CO.

CHICAGO 14

Scale model toys

DeVilbiss

Spray painters using DeVilbiss equipment to finish 1/16 scale MODEL road graders.

BRANCH OFFICES AND DISTRIBUTORS IN PRINCIPAL CITIES THROUGHOUT THE

are *Spray-Painted*

--just like the "*big jobs*"

Famous MODEL toys, made by the Charles Wm. Doepke Mfg. Co., get their true-to-life paint jobs the same way their big brothers do – by spray.

These beautifully-designed, ruggedly-built working models last three times as long as similar toys. That goes for the durable finish, too. Because quality is so important, ordinary mass production toy painting methods would not be practical. That's why the Doepke Company chose DeVilbiss Spray Equipment – the same equipment used by automotive and earth-moving machinery manufacturers.

Four men work in a water-wash spray booth using DeVilbiss spray guns, paint tanks and transformers to turn out one toy every 30 seconds. Touch-up, repair and experimental work is done in leg-type dry booths, again using DeVilbiss guns, tanks and transformers. The result is a uniform, long-lasting finish that stimulates sales.

For any of *your* products where high quality and uniformity of finish is necessary at low cost, investigate the use of DeVilbiss Spray Equipment – guns, booths, air compressors, material tanks, hose and connections. Look for the name of your DeVilbiss distributor in the Yellow Pages of your phone book, or write to our factory for information.

THE DEVILBISS COMPANY
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FOR BETTER SERVICE, BUY
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UNITED STATES, CANADA AND THE WORLD

Here is a short article about rubbing. For the past six years there has been a controversy between the television manufacturers and some of the newcomers in the cabinet manufacturing field as to what constitutes a rubbed finish. I've arbitrated some of the differences of opinions and the answers were always the same.

The situation isn't serious, but I feel that an article clarifying the subject will bring their thinking closer together. This article is actually a condensation of a gab session that six of us dumb finish men had some time ago.

Herman Hardesty

WHAT Rubbing MEANS

THE THOUGHT implied by the above title may sound silly to most finishers but in the past few years there has been some little discussion about rubbing furniture finishes. Just what is covered when a rubbed finish is specified?

I believe the general conception of rubbing operations—that is what has been accepted for years—can be described as to include *every operation that tends to cut or level the finish to bring the surface nearer to perfection*, or to a uniform plane, with a uniform sheen.

This idea may be contrary to the thinking of some of the newer people in the furniture field who contend that rubbing means the initial cutting down of the finish. The only operation that takes place in the rubbing room, that is not a part of the actual rubbing, is the application and drying of a polish material, such as wax or oil.

How Finishers Rubbed Several Years Ago

Years ago the accepted rubbing procedure was to cut down the surface with felt hand blocks, using pumice stone as an abrasive and water as a lubricant. This was followed with another rubbing with a finer grade of pumice. Then the surface was rubbed with rotten stone and water; and where higher sheens were required, another rubbing operation, using tripoli as an abrasive, was specified. [*To p. 74*]

for color retention on light finishes-here is

CRYSTAL CLEAR LACQUER

WATER WHITE

It's a new, time-tested material for preserving the original color of those beautiful grays, off whites, lime, pearl, sea mist, ermine and all pale, bleached and decorative effects so popular on furniture of today.

Crystal White Lacquer has excellent color retention, and it can be depended upon to protect the surface from the danger of discoloration due to exposure in the store or home.

A free working sample, together with finished wood panels showing the new colors, will be sent upon request. No obligation!

THE SCHAEFER VARNISH COMPANY
INCORPORATED
15TH AND MAGNOLIA LOUISVILLE, KY.

With the old system, good grades of furniture were cleaned up with alcohol. (Clean-up men were specialists). This clean-up would have been considered an important step in the rubbing because the varnish finish was soluble in alcohol, so the operation was intended not only to remove residue but to flow the finish to cover any scratches left after rubbing with the finest abrasives.

The Usual Rubbing Technique Today

Today's rubbing usually follows these proceedings: A machine sanding (air or electric) using No. 320 or 360 grit sandpaper, followed (in some instances) with another sanding, using No. 400 or No. 600 grit paper. Rubbing oil is used as a lubricant. After sanding, the surfaces are compounded—that is rubbed or polished (use the word you wish) with a rubbing compound. For higher sheens, this work is followed with another compound made of finer abrasives and, in some cases, the finish is buffed with a lambs wool buffer and a buffing material to achieve the smoothest surface possible.

Compare the old and the present procedures and you will find that the operations have changed but little or not at all; only the materials and methods have changed.

The main thing that has changed though, is what is accepted as a rubbed finish. The many procedures that are used to obtain given effects are causing much of the confusion in what is and what isn't rubbed. For example, here are a few different procedures, and the result of any one of them today might be called a rubbed finish, but the final result of each one is entirely different.

Some Different Rubbing Procedures—and Results

1) Steelwool only.

2) Surface partially cut down with No. 320 sandpaper; then wooled with No. 4/0 steelwool.

3) Surface completely cut down with No. 360 sandpaper; then wooled with No. 4/0 steelwool.

4) No. 3/0 steelwool may be used in place of No. 4/0 steelwool.

5) Surface partially cut down with No. 320 or 360 sandpaper; then compounded with a rubbing compound.

6) Surface completely cut down; then compounded.

7) Procedure No. 5, followed by a polishing compound.

8) Procedure No. 6, followed by a polishing compound.

9) Procedure No. 7, followed with a buffing operation.

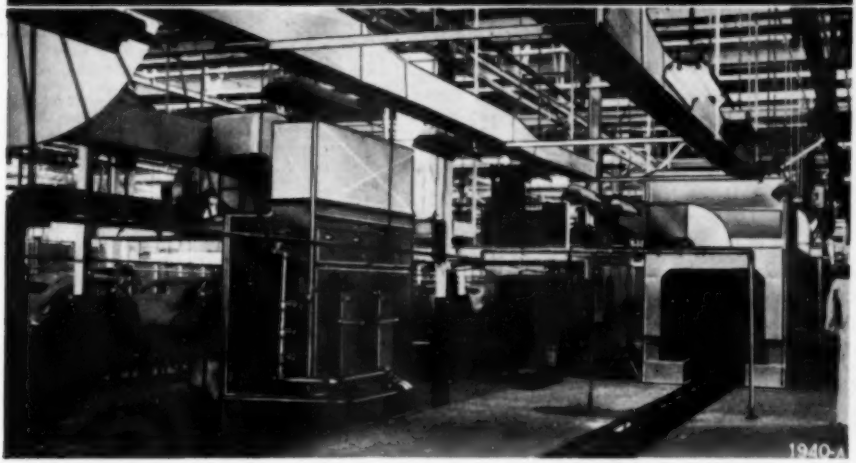
10) Procedure No. 8, followed with a buffing operation.

The clean-up that follows the actual rubbing is not necessarily a part of the rubbing procedure today, because it does not change the physical character of the finish surface; it only removes the residue of rubbing materials and the finish cuttings from the surface. It would be foolish to rub a finish to improve its appearance unless a good clean-up job followed.

Rubbing Procedure Should Be Written into Specifications

Whenever and wherever furniture is purchased, where it requires a definite sheen on the finish, the rubbing procedures should be writ-

HOW KOCH ENGINEERING ASSURES A MORE EFFICIENT FINISHING SYSTEM:



KOCH engineers appraise your finishing problem considering (1) process needed, (2) exact sequence of operations, (3) building layout, (4) best method of handling to tie in with other operations, and (5) production schedules.

Your system is then engineered to fit your specific requirements, built with a background of over 80 years of metalworking experience, and installed so that every component dovetails perfectly. No last minute changes, no costly extra work.

KOCH'S single responsibility for the entire job results in peak operating efficiency, increased production at lower unit cost. *Request a KOCH engineer now for consultation without obligation!*

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KOCH also builds baking ovens, spray booths, metal washing equipment and air makeup systems. Write for Folder K-10.

PHONE, WIRE OR WRITE TODAY!

GEORGE **KOCH** SONS, INC.

EVANSVILLE, INDIANA

ten into the specifications; and it is also wise to include in these specifications complete clean-up procedures, stating the operations and materials to be used. Even this leaves some chance for variations in sheen because of the human element involved. Seldom will the rubbing of two men, using the same material and the same method, result in exactly the same surface sheen or appearance.

A finisher with one of the larger finish material manufacturers aptly suggests, "There is one way to be assured that the sheen specification on finishes is followed. Don't tell the finisher how to get the sheen, just tell him what kind of a surface and what percent of gloss is required. Use a gloss meter to check the final results". It does sound simple doesn't it?

West Coast Spray Painting School at Binks in L.A.

The proper training of spray painting personnel has been one of the pressing problems created by the rapid expansion of the West. To help solve this problem, the Binks Mfg. Co. of Chicago will hold its first West Coast Spray Painting School in Los Angeles during the summer of 1953.

Classes will be conducted in a specially prepared room at the Los Angeles plant of the Binks Co., 4915 Pacific Blvd., Los Angeles. There will be four one-week sessions as follows:

July 6 through July 10.
July 13 through July 17.
July 27 through July 31.
August 3 through August 7.

The Binks West Coast School is especially suitable for training officials, painters, foremen, industrial distributors and all of those who service spray painting equipment. Classes are composed of men with similar interests and similar problems involving spray finishing and coating.

William Beacham, nationally-known spray painting authority, is in charge of the classes. Mr. Beacham's broad background of experience as director of the Binks Research Laboratory will be very helpful to those who have questions about the proper application of specific finishes and coatings. Mr. Beacham will bring to Los Angeles all the visual aids and other equipment that he uses for his classes at the Chicago plant. One of h's most recent aids is a soundslide film explaining the operation of spray painting guns and related equipment.

No tuition is charged. Classes, limited to 25 students. Applications should be made two or four weeks in advance of class dates. Send all requests for enrollment to Mr. J. E. Roche, Binks Mfg. Co., 4915 Pacific Blvd., Los Angeles, Calif.

Industrial Metal Protectives' New President

Joseph E. Berman has been elected president and chairman of the board of directors of Industrial Metal Protectives, Inc., Dayton, Ohio, manufacturer of Zinclate, a substitute for galvanizing. Berman succeeds H. A. Toulmin, Jr., who sold his interest in the firm.

Los Angeles plant of Binks Mfg. Co. Classes for the Binks Spray Painting School conducted for four successive weeks starting July 6, will be held in this building at 4915 Pacific Blvd.

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Paint Rubber Traffic Cones

We note, on pages 86 and 88 of March 1953 issue, an inquiry concerning a finish for coating rubber traffic cones, as used by cities, counties and turnpikes.

We are at the present furnishing coatings for this type of product and they have proved to be entirely satisfactory for this purpose.

Please refer to our full-page advertisement on page 93 of Dec 1952 issue of this magazine for a brief description of our new type of coatings for all types of rubber products. If you care to give us the name of the company concerned, we will be glad to write them direct . . .—*The O'Brien Corporation.*

In a letter we are giving you the name of the paint manufacturer who is making this inquiry in behalf of a customer.—*Editor.*

Paint Stripper; Wash Off

The article entitled, "Paint Stripper That Washes Off Easily," in the "Letters from Readers," page 82 of March issue, interests us very much.

The removing of lacquer, enamel and zinc-chromate primer from aircraft dural surfaces has always been a problem in our business. If the product "Helperize" is capable of quick and efficient stripping off these materials, we would appreciate the address of the manufacturer. Also should you know of any other manufacturer's product, such information will be appreciated.—*H. Aircraft, Inc.*

Information sent by letter.—*Editor.*

Fire Retardant Paints

We are interested in finding out the names of leading producers of fire-retardant paints and mastics.—*U.S.*

In a letter we are naming several concerns that can probably supply what you want.—*Editor.*

Who Sprayed First?

Can you tell me the date of the first application of spray painting, and by whom? I will appreciate it very much if you can supply this information.—*L.C.S.*

We don't know. Perhaps some of the spray equipment people can tell you.—*Editor.*

Flock Finishes and . . .

On page 82 of Feb., 1953 issue, we notice a request from one of your readers for the names of flock manufacturers, and your note that you are submitting same to this reader.

We are sending you a copy of our booklet on Flock Finishing and our color cards, so that you may know what we can offer by way of help in answer to an inquiry. [*To page 80*]

Buy "KNOW-HOW"

They're a new tool for the Coating Industry.

Over the years, the Watson-Standard Company laboratories have made available the newest developments in metal finishes.

Now, we present a series of Gold Lacquers based upon EPOXY RESINS and EPOXY RESIN ESTERS.

These coatings show excellent chemical resistance, outstanding adhesion to metal, superior toughness and fabricating properties.

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As you probably know, we took over the entire flock manufacturing division of the Behr-Manning Corp. of Troy, New York, about two years ago, and are manufacturing and selling "Verlon" flock which supercedes their precision cut rayon flock, known as "Behrlon."—*Vertipile, Inc.*

Gold and Silver on Plastic

We notice a lot of plastic toys coated in gold and silver that resembles metal. I refer particularly to toy plastic pistols, etc. Could you furnish us the names of the manufacturer of this coating?—*F.F.*

In a letter we are naming several concerns, any one of which can probably supply what you want.—*Editor.*

Who Supplies "Firzite"?

We have some work to finish and the architect specifies natural wood coated with "Sirzite," or it might be "Firzite." The architect was not able to advise us where we might find the material and we have not been able to locate it out of Milwaukee. We are wondering if you could tell us who to contact for this type of finishing material?—*E. Church Furn. Co.*

According to our trade-mark directory, it is a product of Breinig Bros., Inc., 95 Harrison St., Hoboken, N. J.

To Finish Red Cedar

In industrial Finishing Magazine, for February 1945, there appeared an article entitled, "To Correctly Finish Aromatic Red Cedar." Can I get a copy of this issue or tear sheets of the article?—*W.J.B.*

We happen to have found an old copy of this and are sending you tear sheets of the article.—*Editor.*

Finishing Furniture

In Feb., 1952 issue of *Industrial Finishing* we notice a Part V, of the following article: "The Theory and Practice of Finishing Furniture." Have you published a single pamphlet including all of the different parts coming under this heading? If so, what does it cost?—*A.C.*

Yes, the five parts of this article are included in a reprint which we sell at 20 cents per copy.—*Editor.*

Reclaiming Paint Sludge

Will you give us some data as to how the reclaiming of enamels and lacquers is obtained, when using a water curtain spray booth? I am interested to know if the material can be used after being reclaimed, without

There is no more convincing proof of Egyptian Industrial Finishing Laboratory "Know How", than the increasing number of "well done" handshakes Egyptian Finishes Specialists earn from enthusiastic product manufacturers everywhere.

Put to your use, as thousands of progressive manufacturers do, the highly specialized knowledge of your Egyptian Specialist and the ingenious Egyptian Laboratory Technicians behind him. Let them help you develop an outstanding coating for your product . . . and remember . . . Egyptian assistance does not end here. Your Egyptian Specialist can keep you constantly informed of new finishing techniques and how you can benefit by them . . . he can tell you the specifications for finishing any Government Product . . . help you break finishing bottlenecks in your plant. Often his suggestions result in reduced overall finishing costs.

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any special treatment, or if it has to be sent to the paint factory for special treatment.—*L.G.G. (Mexico).*

It is customary to collect the paint sludge, place it in drums and ship it either to paint companies that have a reclaiming service or to a concern that makes a business of reclaiming and reprocessing paint sludge. The material must be cleaned and certain materials must be added to it to make it usable again. It is really a technical job for a concern that is set up especially to do this kind of work.

One of the concerns that offers a paint reclaiming service has an advertisement in February and March issues of this magazine.—*Editor.*

Coating Turnings by Tumbling

We believe that a few issues back there was an article in Industrial Finishing on a tumbling operation for small round wooden parts. This article has been described to us as being very good and inclusive in all details. We could use six copies of the article, for which we will be glad to pay you, if it was published in your magazine. If available, please mail the copies to the attention of the writer.—*M.P.*

The article appeared in Nov., 1949 issue. We are sending you a few reprints, the price of which is ten cents per copy (stamps accepted).—*Editor.*

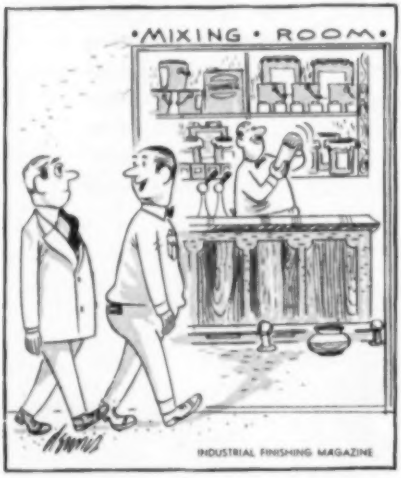
Dipping Article Interesting

In Nov., 1952 issue of *Industrial Finishing*, the illustrated article on "Coating the Surfaces of Products by Dipping" was of interest to us.

We want to get dipping equipment that may be used in our processes, samples of which we are sending you.

We are interested in racks or boards which we may load, and in a dipping unit which will give us a precision dip. We will appreciate any information you care to send us.—*B. Pencil Co.*

In a letter we are sending you the names and addresses of several manufacturers and suppliers of precision dipping equipment.—*Editor.*



"Now you'll see why we claim to have the best mixing room this side of the Mississippi."

Wood Handle Dipping

We expect to obtain a contract to paint 110,000 handles. These handles are of thoroughly seasoned, kiln-dried hard maple or birch, free from knots or checks. They are to be given a coat of sealer, a coat of pigmented primer, and a coat of flat enamel. The primer and enamel are alkyd base, with no specification for the sealer. They say the sealer is to air dry about one hour for rapid drying type, or 18 hours for slow-drying type.

We would like for you to give us some method of finishing these han-

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BARRETT VARNISH COMPANY has 83 years of experience in creating and producing industrial finishes of every sort; will be happy to offer their technical services so that your product may gain distinction of appearance through a superior finish.

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dles. They are perfectly round; they are about 9-in. long, 1½-in. in diameter, turned slightly smaller in size to form, at one end, a "tenon" to fit into a hole. The plug end (tenon) is not particular, although we would certainly give it a coat of the sealer.—*C.H. Co.*

We suggest dipping. In a letter we are enclosing a reprint of an article about Dip Coating. Also we are naming several manufacturers of dip coating machines.—*Editor.*

Measurement Instruments

Would you please send us the names and addresses of people who manufacture or handle instruments to measure paint film thicknesses on chrome and gold plated zinc die cast, aluminum die castings, aluminum sheets, steel stampings, ferrous and non-ferrous metals?

Perhaps you can give us the address where these instruments might be purchased; also, where various instruments used in the industrial spray painting field might be purchased.—*D.C.B.*

Try Henry A. Gardner Laboratory, 4723 Elm St., Bethesda, Md., for what is required to measure paint film thickness.

For instruments used in spray painting, write the spray painting equipment manufactures whose advertisements apear in every issue of this magazine.—*Editor.*

Metal Dent Filler

Can you give us information on where to obtain a quick setting, non-shrinking, non-cracking filler or putty for use on metal dings? The material must withstand 350° F. for 15 minutes. It is to be coated with primer and synthetic baked enamel.—*S.M.P.*

"Metal Cover" is the trade name of one of the materials used for this purpose in railway car shops. The name of the suppliers of this material and the names of others who offer similar materials are being sent you in a letter.—*Editor.*

Electric Conductive Paints

Can you furnish us with the names and addresses of firms that supply electric conductive paint containing silver?—*E.S.R. Co.*

In a letter we are naming several concerns who are listed on our reference cards as being manufacturers or suppliers of electrical conducting paints, but we do not know which one, if any, uses silver in its products.—*Editor.*

Bleaching Mahogany

In the March issue, Question and Answer Department, under the heading "Bleaching Mahogany," there appears, on pages 92 and 94, an article written by George Romano in which reference is made to the B.R.Co., whose inquiry appeared in "Letters from Readers" in February issue, page 78.

We will appreciate your giving us Mr. Romano's address, as well as the name and address of the B.R. Co., so we can pass on to them some valuable technical information in regard to bleaching.—*Spe-de-way Products Co.*

Information supplied.—*Editor.*

What They're Saying . . .

TV CABINET MANUFACTURERS: DeBurgh system applications to your business will improve finish, cut your costs, phenomenally increase your production and generally pay for itself within a year from labor savings alone!

Exclusive patented features permit maintenance of same low unit production cost regardless of radical production fluctuations. Systems usually pay for themselves in one year or less from labor savings.

"Our Cost Engineer indicates this conveyor has enabled us to do approximately twice as much work with half as many men as we were formerly able to produce without the conveyor."

F. J. Michaels,
Oxford Cabinet Co.,
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"Our finish has been greatly improved in quality. We heartily recommend your system."

Harry L. Greenberg, Treas.-Secy.,
Angeles Furniture Mfg. Co.,
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"After operating the DeBURGH FINISHING SYSTEM for more than a year, we again visited a number of other conveyorized plants, and are fully convinced that we have the best."

H. C. Lucas, Secretary,
Gillespie Furniture Co.,
Los Angeles, Calif.

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B. M. Baker,
Grand Rapids Chair Co.,
Grand Rapids, Mich.

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It is well-known, now, in most of industry concerned with finishing, that HOT SPRAY LACQUER has some outstanding advantages.

It covers better, dries faster, and is better adapted to conveyor-system spraying. All these features mean *lower finishing costs.*

ROCKFORD VARNISH is a first-class source for all types of Hot Spray Lacquers. Our laboratory sets rigid standards for formulation, using only the best of materials, and accurately prescribing the mixture to perform as you wish under the conditions in your plant.

Thus, from Rockford Varnish, you can be assured of top quality to suit your requirements. Give us the word on what you need . . .

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Intriguing

To excite the interest of the prospective buyer, a product must often depend largely on the factor of *appearance* . . . a condition which frequently depends, in turn, on the choice of proper coating for beauty and for protection as well. Such a choice of finish is an exacting problem, requiring specialized knowledge and long years of experience in the field. For your own product line, why not consult our skilled and capable experts, who will study your problems and make recommendations without obligation. Your inquiry will receive prompt attention . . .

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Fill and Stain Core Edges of Birch Veneered Doors

Perhaps you can help us solve a problem. As wood cabinet manufacturers, we fabricate a birch veneer, fir plywood core door with lipped edges. Our problem is: 1) to fill voids in the core; 2) to color the door edges (the fir plywood core) to a shade matching birch. At present we fill core voids in a time consuming process involving putty knives and wood plastic.

We are interested in a flocking, caulking or plastic material that can be readily applied to do a better job more quickly.—*B. Mfg. Co.*

Since these voids, as you call them, are not uniform in size nor regularly distributed, it is customary to do this "crack filling" manually, forcing in a prepared crack filler where it is needed and smoothing it off flush with the surface, using a putty knife for the job. You must use a crack filler especially suited to use on wood because it must adhere firmly to the wood and to itself; it must harden within a short time to approximately the hardness and texture of wood so it can be cut with wood cutting tools; and it must "take" stain and finishing materials satisfactorily. Several makes of crack filler are on the market—some being colored to match the color of wood on which they are used. In a letter we are naming a few suppliers of crack filler.

After the crack filler is applied and smoothed over, any finisher can apply a stain to make it reasonably match the birch. Any manufacturer of wood stains can supply suitable stain for the work.—*Editor.*

New Church Pews Discolor

A little over a year ago we furnished a greenish-gray combination stain-filler finish job on church pews. After this job had been in over two months, we received a complaint that yellow spots were showing in the finish.

In our finishing we followed the usual procedure of applying the stain-filler, allowing at least overnight drying (some dried for almost a week and it is these pieces that seem to have developed spots the most); then spraying on a coat of lacquer sealer; sanding this with portable air-driven reciprocating sanders, using No. 3/0 garnet paper. After sanding, all parts were wiped free of dust and given a coat of gloss lacquer. Again drying overnight or longer, the pews were given a coat of flat lacquer. The gloss and flat lacquers were very transparent—so-called "water-white."

The finish was very good looking, smooth and tough. Upon examining the complaint we found that the discoloration was in streaks across the grain and in some instances blotches. We used a rubbing compound and tried to rub the spots and streaks out but it cannot be done. These discolorations apparently have no effect on the toughness of the film. However, they seem to be in the film, for when we scraped through the lacquer film and sealer, the greenish-gray color of the filler did not seem to show any traces of yellow discolorations.

(Continued on page 90)

Eliminate "Heavy Overtime"

PEEL SPRAY-BOOTHS CLEAN WITH LIQUID ENVELOPE

Good men are hard to get today. Why waste their time and your money—on the "jack-ass labor" job of scraping down spray-booths? Keep your booths clean, firesafe, better illuminated, better ventilated by using "LIQUID ENVELOPE".

Simply spray on with your regular spray-equipment. When overspray accumulates, break film and peel off in great big sheets. Takes only a few minutes for a 12 x 12 booth. Actually costs less than the hand-labor way. Order a 5-gallon Test Sample (Drum Lot Price on test-sample order!)

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Hubbard & Stau, Los Angeles, Calif.
The Plastic Paper Co., Los Angeles, Calif.
C & H Supply Co., Seattle, Wash.
Hugh Russel & Sons, Ltd., Montreal & Toronto, Canada

We have two other jobs, one on elm and one on plain oak, on which the same stain-filler was used and both are fine. The job in question is on elm wood. The materials used were all high class and we cannot understand what could cause this. We thought at first that some polish or cleaner might have been used, but our customer claims not; the pews, while in service, were merely dusted off with clean cloths.

Have you had any experience along this line? We have been finishing church furniture for several years, and the finishing room foreman has been a finisher all his life—on his own and in the employ of others. The job was A-1 and still is for that matter, outside of these streaks and spots, and it is not on all parts nor on all pews. What could cause this? It has us baffled. We have never had anything like this happen before, and we are not youngsters in the business. In fact, no finishing business is called upon for more varied finishing than a church furniture plant.

A portion of our contract is being held back because of this difficulty. We do not feel that it is our fault but the customer claims it is. We were not notified of the shortcoming for over two months after the furniture was delivered.—*X.Co.*

This is a problem that cannot be answered with any degree of accuracy from a distant location. A man familiar with finishing materials and methods should be called in to the plant and delegated to trace down everything connected with the job in detail, including all shop conditions; and he should visit the church where the pews are in service; visit it on a day of sunshine. There is a bare possibility that rays of sunshine, at some time of the day, are coming through certain windows and causing the discoloration. At any rate, this is worth looking into before beginning a thorough investigation, including the making of tests, at the plant.

Have you called in a representative from your supplier of finishing materials? Many concerns dump problems of this kind into the lap of their supplier of materials. The salesman or representative is called in and he or his boss is given to understand that he must find the cause and remedy for the trouble or else . . . . Usually he delivers—if he can.

One experienced finisher and consultant, to whom we referred this problem, writes as follows:

"The trouble appears to be between the filler and the sealer. I am assuming that the filler was a 'home-made' job. In coloring the filler, an oil yellow powder may have been used. When adding the color, some of the granules may not have been completely wetted and, when towed off across the grain, they were broken up and wetted thereby producing the yellow streaks across the grain. After ragging and cleaning up it would take a very good eye to detect anything. After sealing and lacquering, the lacquer coats would naturally bleed out the oil color. this would be only slightly noticeable at first but it would be more apparent later on. The above could happen to a factory made filler.

"As to the pieces that had dried almost a week, they may have received most of the unbroken color. There is also the possibility that rags were used that had some yellow coloring in them.

"Although I may not be correct in the foregoing analysis, I have seen similar cases and everything points in the above direction."

Another man, experienced in wood finishing, makes the following suggestions:

"1) If a bleach was used before finishing, then it is possible that it saturated certain areas and was not dry when the finish was applied.

"2) Due to the nature of elm, the

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A TO Z

For 78 years the top quality of O'Brien Industrial Finishes has been proved in American industry. Our constant research and broad experience can be of benefit to you — whatever product you make. The O'Brien Corporation, South Bend 21, Indiana.

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sanding in the white may not have been uniform; course areas may have remained to retain the filler solvents and, in turn, discolor the finish.

"3) The portable sander may have thrown oil on the sealer coat.

"4) The blues used in the filler were fugitive and, for some reason, they were attacked in some areas more than others, leaving the more permanent color, yellow.

"5) You may have used a non-staple filler. Are you using a combination filler-stain? On dark finishes it can be used if the standards on clarity and filling are not too rigid, but I've never seen a good job done on a light finish. There is often a spottiness that cannot be controlled due to the type of dyes used in this material."

We hope that some of these suggestions may point toward the cause and remedy of your trouble. As stated at the beginning of our answer, the best thing to do, when you find yourself in finishing trouble, is to call in a finishing expert—preferably a qualified representative from your supplier of materials. Call on him first. Of course, if you prefer to call on outside help and are not ready for, or favorable to, the competition that's trying to get in, then call in an independent finishing consultant.—*Editor.*

Infrared Can Be Used On Some Wood Finishes

Editor's Note: A friend of ours, representing a nationally known manufacturer of finishing materials, telephoned us after reading the Q. and A. in March issue, on page 94—the one entitled, "Infrared on Wood Finish?".

He advises us that his company and he worked with the maker of wood chairs who was trying out infrared lamps to speed up the drying of finishes, and that after much experimenting and development work on several hardwoods used for making chairs, they came up with a synthetic finish that worked satisfactorily. Used as a finish on wood chairs it would take a rapid short-time force drying while the chairs moved through an infrared tunnel—and no blisters, bubbles, checks or anything else objectionable showed up, either in the finish or in the wood.

Only catch to it, at that time, was that this successful synthetic material cost almost 50% more than other finishes which would take a longer force drying in other types of drying equipment occupying more space.

Roller Coating

We would appreciate receiving your recommendation of a publication which would give us a good treatise covering finishing by roller coating. We are interested primarily in obtaining information about the roller coating of plywood and hardboards with lacquer or enamel. We would like information covering the machine, finishing material, handling and drying processes, etc.—*S.I.*

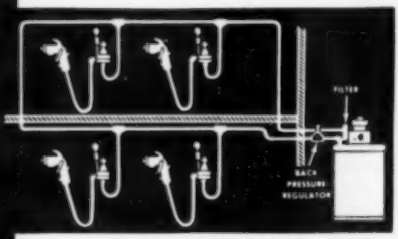
With a letter we are sending you tear sheets of an article on this subject, as published in a past issue of *Industrial Finishing*. We are also submitting names and addresses of manufacturers of roller coating machines. Any one of them can supply you with practical information on this subject.

If you are purchasing coating materials from a dependable and well-established manufacturer, that firm should be in position to supply you with considerable information about materials and methods for roller coating.

The drying of coatings applied by rollers is no different than drying materials applied by other methods. We feel sure that any of the several oven manufacturers that advertise in this magazine can help you.—*Editor.*

SAVE TIME

on the FINISHING LINE with HIGH-OUTPUT VERSATAL PUMPS



Here's the Versatal System

Shown here operating on two floors from a common mixing room source, this full circulating system saves you time, money, materials—gives you unequalled finishing quality and uniformity.

PUMP PAINT DIRECT FROM MIXING ROOM TO SPRAY BOOTHS!

Delays and downtime—danger of fire—rejects and refinishing due to a lack of uniformity or mismatching—all these problems and more are licked with a full circulating system powered by a Versatal Pump. Such a system permits pumping direct from the mixing room, eliminates drum racking and costly delays for refilling and recapping pressure pots.

And the Versatal is designed to deliver more paint per pound of air used than any pump—makes possible *a delivery rate as high as 27 gallons per minute!* Self-adjusting air piston requires no oiling—open frame design separates pump from air motor—no danger of fouling. Versatal Pumps are available with 4¼" or 6½" motors, 22 models, five types of pump tube.

NEW VERSATAL PRESSURE REGULATOR

Handles low or high pressures equally well. Gives you perfect nozzle control—avoids uneven coverage—saves time, money and materials!

A PRODUCT OF SW STEWART WARNER

ALEMITE Versatal SPRAY-PUMP EQUIPMENT

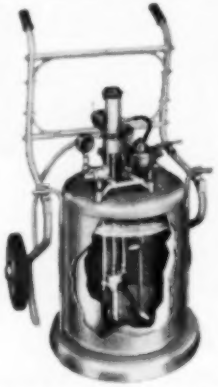
1830 Diversey Parkway, Chicago 14, Illinois

Add Decorative Effects? Will the Paint Stick?

SILK SCREEN process inks and enamels will not always adhere to some of the slick hard baked finishes to provide lasting satisfaction. Some of the melamine and urea formaldehyde base materials bake out so hard, it is almost impossible to get anything to adhere to them. In fact some firms advertise that almost any spilled liquid, grease or oil, including paint, can be easily removed from the hard baked enamel surface without staining or damaging the finish.

Now if paint that is accidentally spilled on the surface can be so easily removed, it follows that any paint applied through silk screen, or by any other method, can be just as easily removed, even after it has become dry. In some cases it can be removed by rubbing with the fingers, or lifting it with the thumb nail.

If you are making a product that requires one of those extremely hard baked enamel finishes and you contemplate silk screening a name, trademark or instructional directions on it, I suggest that you experiment first on test panels to find out how well the decorative paint is going to stick. If these tests show that good adhesion of the process material is not possible, and if the top coat enamel cannot be changed (in its formulation) to make the decorative paint stick satisfactorily, then you may have to resort to the use of separate plate containing the name, trademark or directions to be attached to the product.—*L.L.*



New Paint Pump

HANDLES HEAVIER PAINTS AND COATINGS

- **Portable for Maintenance Painting**
- **Stationary for Production Spray Lines**

The "one coat" era is with us. The trend in industry today is toward a single application of heavier, thicker paints and coatings. *And now . . .* you can get a new heavy-duty pump that *completely obsoletes* any previous methods of applying these materials!

This new 10-gallon Heavy-Duty Graco Paintmaster features a rugged reciprocating double-action pump, air-operated. A built-in agitator keeps paint or other materials constantly in perfect suspension. This Paintmaster will supply more than enough paint for 8 spray guns!

You can disengage the Sta-Level truck easily (no pins or bolts) for stationary operation to supply production lines. New Paintmaster dispenses directly from 5 or 10-gallon original containers.

GRAY COMPANY, INC.
43 Graco Square, Minneapolis 13, Minn.

Write today for Spec Sheet No. 15.

NEW **GRACO** *Heavy-Duty Paintmaster*

REGIONAL OFFICES:
NEW YORK
PHILADELPHIA
DETROIT
ATLANTA
CHICAGO
SAN FRANCISCO

TV SETS • NAME PLATES • TOYS • DIALS • ASH TRAYS • CHASSIS

NAZ-DAR WEATHERPROOF SILK SCREEN ENAMEL

MORE PRINTED AREA AT GREATER OPACITY THAN ANY OTHER BRAND

write dept. I-4 for color card and information

NAZ SINCE 1922 EVERYTHING NEEDED FOR SCREEN PRINTING DAR

INKS • VARNISHES • LACQUERS • SILKS SCREEN PLATES • SQUEEGEES • FILMS

461 Milwaukee Ave. • Chicago 10, Ill.

How to Use Rubbing Lub. Easily, Safely, Sparingly

(Continued from page 53)

rubbing operator to control the quantity of lubricant he picks up with his pad, thus reducing waste. The operator does not have to reach for his pad on the bench, dip it into an open container of lubricant and then hesitate long enough to squeeze out the excess before going ahead with his rubbing. This plan eliminates the unsafe practice of having open containers of highly volatile solvents in the rubbing room.—*Mr. X.*

Metals Disintegrating Co. Holds Conference of Distributors

The Metals Disintegrating Co., Elizabeth, N. J., held a 3-day conference recently at Pocono Manor Inn, Pennsylvania, for its entire group of metal pigments distributors. The conference was opened by H. E. Hall, president of the company, who outlined the objectives of the meeting.

A number of illustrated talks and discussions highlighted the conference, which was attended by nearly 50 members of field organizations as well as key technical and administrative personnel of the company.

Some time was devoted to the introduction and explanation of several important new products of the company, showing how these materials can be applied to metal pigment problems in a wide variety of uses.

Fine Organics, Inc., Appoints Standard Products, Inc.

Fine Organics, Inc., announces the appointment of Standard Products, Inc., of 650 E. Gilbert St., Wichita, Kansas, as its exclusive selling agents for its aviation-industrial line in Kansas, Oklahoma and Missouri.

Standard Products, Inc., has local representation in Kansas City, Mo., and a divisional office in Tulsa, Oklahoma. The company has experienced technical personnel to assist aviation and industrial accounts in the solution of their chemical cleaning problems. The Strato line of aviation maintenance chemicals and F.O. line of industrial maintenance chemicals will be available.

Unsafe Electrical Switch; Unsafe Practice: Fire

RECENTLY AN employee of one of our finishing departments, as was his custom at the end of the shift, washed his hands in lacquer thinner. Then he walked over to have a word with a spray operator. As he stood there talking, he happened to rest his hand on a switch box at the side of the spray booth. This switch (incidentally, the only one like it in this finishing department) was an old oil-immersion type switch and it had been getting too warm because of poor contact points.

Instantly there was a flash and the employee's hand was aflame. A spark from the hot switch had set the fumes from the lacquer thinner afire, as his hand was still wet from having been washed in lacquer thinner.

Quick thinking and prompt action on the part of fellow employees extinguished the flame almost immediately, thus preventing a serious burn and perhaps saving the employee's life. It could have caused a bad fire that might have destroyed the whole factory too.

Explosion-proof switches should be a must for every finishing department. All finishing rooms usually have fumes from the high-volatile materials that are used, and a spark from an open or non-explosion-proof switch can start a fire that could not only take the lives of one or more workers but destroy the factory itself.

Employees should also be cautioned about washing their hands with volatile materials. Sometimes it may be

NOW... FOR THE FIRST TIME! At low cost

A Light Capacity Overhead Conveyor, fully enclosed, continuous powered.

CHAINVEYOR

Features

Simplicity—Engineered to eliminate complicated, fast wearing parts, Chainveyor is revolutionary in simplicity of design.

Track—1⅝"x ⅛" slotted steel tube easily installed with minimum support.

Chain—Full ball bearing wheels mounted on steel side links, heat-treated for long life.

Curves—15" radii provides extreme flexibility.

Take-Up—Adjustable spring take-up automatically maintains uniform chain tension.

Vari Speed Drive—Positive sprocket tooth drive with easily replaceable shear pin protection.

Capacity—30# per pendant at 6" intervals, 60# at 12" intervals when supported by 2 pendants with cross bar attachment.—up to 400# chain pull.

DISTRIBUTORS IN ALL PRINCIPAL CITIES

If your conveyor requirement falls within its capacity—INVESTIGATE CHAINVEYOR. It is truly revolutionary in the materials handling field. Write today for full information. Dept. C

United States Spring & Bumper Co.

4951 Alcoa, Box 2475 Terminal Annex

Los Angeles 58, California

necessary to wash one's hands with these materials, but care should be taken that the employees are not near open switches or other places that might set the materials on fire.—*H. W. Chester.*

Frank Reha, Sales Engineer for Udylite in Michigan

Frank Reha has been made engineer in the Michigan territory for the Udylite Corporation. Reha will take the position vacated by Louis J. Minbiole, who recently was named assistant sales manager of Udylite Division, The Udylite Corporation. He has a degree in Chemical Engineering, and joined Udylite as a chemist in 1939.

Shell Chemical Announces New Epichlorohydrin Plant

A supply of epichlorohydrin for both the present and the future needs of the nation is assured by a new epichlorohydrin plant in Houston, Texas, announced by the Shell Chemical Corp.

Epichlorohydrin, of which Shell Chemical Corp. is a large supplier, has recently become a key chemical product. Not only is it a major component of epoxy resins, but it is also used in adhesives . . .

The new epichlorohydrin production will be tied in with the expansion of Shell Chemical's facilities for manufacturing Epon resins.

H. M. Anderson, Jr. Joins Surface Chemicals

Mr. Harry M. Anderson, Jr., has been appointed Assistant to the President, in charge of Surface Chemicals, Inc., division of The McKay Co. In his new position as assistant to James C. McKay, President, Mr. Anderson will direct the research, manufacturing and sales program for the company's extensive line of specialty finishing products and chemical resistant finishes. He will make his headquarters at the company's laboratories and plant in McKees Rocks, Penna. Plans call for the expansion of the company's activities to include the developing and manufacturing of all types of finishes for every use in all industries.

KEEP SPRAY BOOTHS SAFER FROM FIRE!

WITH NON-INFLAMMABLE

BOOTHCOTE #4

FOR DRY WALL BOOTHS
PERFECT LUBRICANT FOR FORMS

BOOTHCOTE #5

FOR WATER WASH BOOTHS
PERFECT RUST PREVENTATIVE
INSIDE STORAGE — OUTSIDE STORAGE

Makes frequent cleaning easy. Pre-mixed, ready to use, safe to store. Saves time, labor, no flaking off. Spray or brush on clean booth. When desired, operator peels off overspray in sheets. Advocated by insurance companies.

Money-Back Trial Offer: 5 gals. $6.25

KLEENCOTE

WATER WASH COMPOUND
BREAKS UP PAINT—NO CLOGGED UP SYSTEMS

HYGRADE'S STERLING CREME
HYGRADE'S SKIN GUARD

protects hands, face and arms from paint, grease, ink, etc. penetrating skin. Soil washes off easily without harsh solvents or cleaners. Paint and grime washes off. Reduces blackheads and skin blemishes.

12—7 oz. Jars—$6.00

HYGRADE'S STERLING CLEANER
HYGRADE'S HANDY SOAP & CLEANER

WATERLESS HAND CLEANER

dissolves grease, grime, fresh paint, tar, printers' ink, shellac, mastic cement, etc. without water. Use for cleaning refrigerators, ranges, etc., before shipping.

12—14 oz. Jars—$7.08
All prices f.o.b. Buffalo

HYGRADE
FOOD PRODUCTS CORP.
INDUSTRIAL DIV., 18 STETSON ST.
BUFFALO 6, N. Y.

Materials Supplies Equipment

Ultrasonic Cleaning Process Developed by Detrex

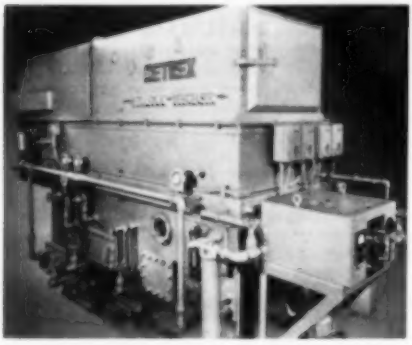
The Detrex Corporation, Detroit 32, Mich., manufacturer of industrial cleaning equipment and chemicals, announces the development of a practical method of metal cleaning through the use of ultrasonic waves. The new method, known as the Detrex Soniclean Process, features a man-made element for directing sound energy . . .

The element is a curved piece of ceramic resembling a 6-in. long pipe, cut in half along its longitudinal axis. The ceramic pieces, which can be connected in series and arranged as desired, are designed to offer focusing and flexibility properties . . .

Electrical energy is transmitted to the ceramic transducer, converted into sound energy, and projected through solvent at a frequency of 430,000 cycles per second. The solvent being used is trichlorethylene; however, the process is not limited to this material. Because a potential of only 40 volts is needed to operate the ceramic transducers, they can be safely immersed in the solvent.

Material to be cleaned is placed in the solvent, either manually or by conveyor, directly in the path of greatest focal intensity of the ultrasonic waves. In this area an extreme turbulence is created, resulting in a deep and penetrating cleaning action that

Extreme agitation in the liquid is caused by ultrasonic waves projected from a ceramic element, known as a transducer, which is the key to the new industrial cleaning process.



New, fully-conveyorized ultrasonic degreaser developed by Detrex Corp., for the Electric Shaver Division of Remington Rand, Inc. The final cleaning of parts by the use of ultrasonic waves is incorporated in the regular degreasing cycle. The equipment shown here is more than 6-ft. high and 12-ft. long. Note the high frequency generator at the right.

Bottoms up! for Stantite

STANTITE Spraying Primer has passed the tough test of a ship's bottom with colors flying. That's why many ship owners are undercoating with **STANTITE** to minimize corrosion and rust creep. And on land, wherever metal is coated, rust-inhibiting **STANTITE** also provides excellent adhesion to any metal surface, with most top coats. Ideal under air-dried or baked finishes, it dries rapidly . . . is unimpaired by any baking schedule. Find out *now* what **STANTITE** can do for you . . . write today: Stanley Chemical Co., 41 Berlin St., East Berlin, Conn.

STANLEY

Industrial Coatings

STANLEY CHEMICAL

LACQUERS · SYNTHETICS · JAPANS · ENAMELS

removes, almost instantly, all dirt, grease, chips and microscopic particles of soil from even the most intricately designed and close-fitting parts.

The high frequency Hypersonic generator used in the Soniclean Process is protected by numerous safety and overload devices and provides easily adjustable tuning drawers that offer absolute frequency control. The unit operates on low voltage current.

First commercial equipment employing the Soniclean Process is now in operation at the Electric Shaver Division of Remington Rand, Inc., Bridgeport, Conn. It is fully conveyorized and is used for the precision cleaning of shaver heads at a rapid rate of speed.

In cases where exceptional cleaning quality is required or where parts have fine openings, crevices and other hard-to-clean forms, the Detrex Soniclean Process is claimed to be very fast and economical.

New Water Wash Spray Booth

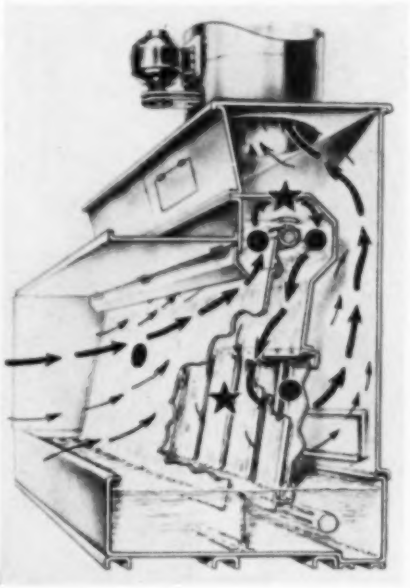
A new Dynaprecipitor water wash spray painting booth (easy to clean; meets all health and safety requirements) is announced by Binks Mfg. Co., 3122 Carroll Ave., Chicago 12, Ill. The new booth uses a combination of water washing and centrifugal force. The resulting actions of scrubbing and impingement make the exhaust air free of pigment.

Overspray and fumes are drawn through the new booth by a powerful exhaust fan. The air travels a winding route designed to trap all air borne paint particles before they reach the fan or the outside. Thorough water washing, or scrubbing, takes place at four locations. Paint particles are flushed into a collection pan for easy reclamation or removal.

In addition to scrubbing the air as it goes through the washer, the water system constantly flushes surfaces of the washer where paint impinges, or strikes. This greatly reduces "down time" for bootn cleaning.

The impingement action takes place at two major locations in the booth. At these points air flowing through the booth makes abrupt changes in direction. Centrifugal force, resulting from this sudden change, flings paint particles out of the air on to the walls, curtains or baffles of the booth. Since every impingement surface is contanually washed by water, paint particles thrown out by centrifugal force are also flushed into the collection pan for reclamation or removal.

(Continued on page 102)



Where you see the large black dots, exhaust air containing entrained paint particles passes through a water curtain. The particles adhere to the water and are scrubbed into the collecting pan.

At points marked with a black star, a sudden change in direction of flow causes whirling of exhaust air. Centrifugal force separates paint particles from air stream.

IT HAPPENS EVERY DAY...

YOUNGSTOWN KITCHEN CABINETS PASS THE "ADDITION TEST"

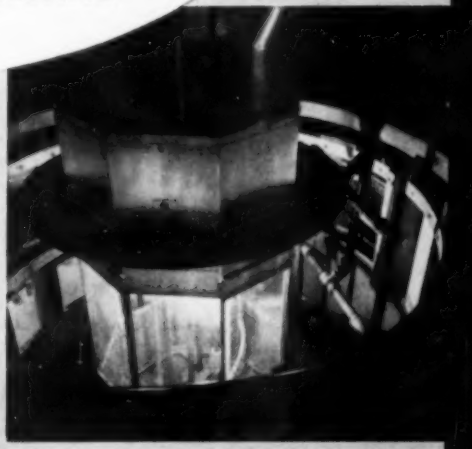
No age-yellowed cabinets detract from new additions to kitchens equipped by Mullins Manufacturing Corporation. Old cabinets are as white as new ones . . . stay white for years and years.

The reason? Dependable Arco Finishes . . . *built to stay white* by Arco formulating know-how . . . *proved to stay white* by unique Cycle Testing in the famous Arco Research Laboratory.

The Arco Microknife, designed and patented by Arco for extremely accurate measurement of adhesion and film hardness.

One of Arco's Weatherometers, specially modified to produce the most accurate weathering or aging at a highly accelerated rate.

FOR *YOUR* TOUGHEST FINISHING PROBLEM THERE'S AN ARCO FINISH PROVED BEST BY ARCO CYCLE TESTING



Experienced formulators tailor quality finishes to exacting specifications . . . prove performance by an elaborate series of tests. Arco Cycle Testing evaluates finishes to a degree unequalled in the industry . . . assures a quality finish for your quality product!

ARCO PAINTS Quality SINCE 1881

BE SURE with **RESEARCHED PROTECTION**

TESTED *FIRST* TO *LAST*!

THE ARCO COMPANY, 7301 BESSEMER AVENUE • CLEVELAND 27, OHIO

A Subsidiary of American-Marietta Company

Are You In This Fix?

Here's A Way Out —

LET POTTER HELP YOU SAVE MONEY SAFELY ON

Thinners

We make nothing but **thinners**—For over a quarter of a century, we have been saving money for big and little customers. They like us because we make the thinner they want at a **money-saving price.**

Let us show you how a Lacquer Thinner **SPECIALIST** can supply you with the **right** Thinner . . . and still save you money.

Just fill out form below and mail today. We'll work out a Thinner *especially for you*, and send a sample. We know we can **save** you money.

POTTER PAINT CO., INC.
CORTLAND 1, N. Y.
THINNER SPECIALISTS

The product we make is:_____
We use Lacquer Thinner for:
☐ Spray ☐ Dip ☐ Cleaning ☐ Other_____
We use Lacquer Thinner on:
☐ Metal ☐ Wood ☐ Other_____
We want it to dry:
☐ Fast ☐ Slow ☐ Medium

Name_____
Address_____
City_____ Zone____ State_____

A new design feature includes self-scouring baffle plates located at the base of the rear water curtain. Their purpose is two fold: to trap any pigment that may have escaped prior washing or air whirling, and to remove any free moisture in the exhaust air.

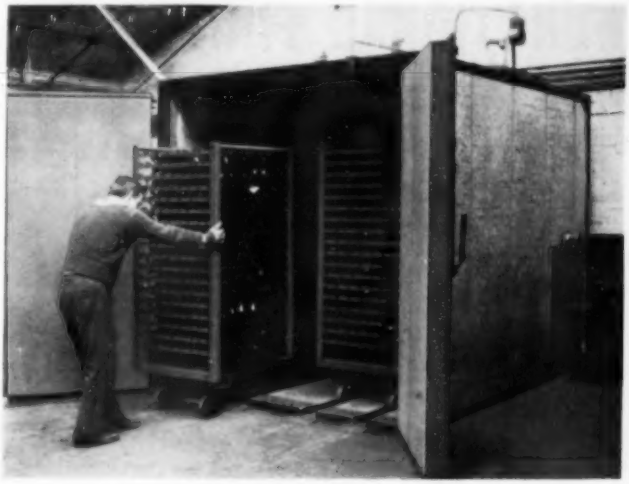
To negotiate the staggered baffle plates, the exhaust air twists and turns. As the air makes this winding passage, paint particles in it are again subjected to the dual action of scrubbing and impingement. The violent air whirlings also fling any free water drops in the air against the baffle plates. By the time the exhaust air leaves the baffles, it is free of virtually all pigment and carries no free water.

New Flexible Baking Enamel Stain Resistant and . . .

Development of a stain-resistant, highly flexible baking enamel 50% harder than previous standard enamels is announced by the Glidden Co., 11001 Madison Ave., Cleveland 2, O.

A vigorous hammer blow dents the panel but doesn't crack the paint film Nubelon S which is durable, flexible and color fast.

for
Quality Baking
in
Gas • Oil Electric or Steam Ovens



Write for Catalog 122

W. S. ROCKWELL COMPANY
2783 Eliot St., Fairfield, Conn.

Called "Nubelon S," the new industrial finish was more than five years in laboratory stages of formulation and testing. Resistance of Nubelon S to abrasion, corrosion and chemical action, added to its cost advantage, recommends it as a replacement for porcelain and galvanizing for many purposes, the company says.

In addition, its extreme flexibility offers possibilities of finishing metal sheets before forming them into finished products.

The enamel, which incorporates an unusual modification of silicone resin as its base, halts corrosion . . . .

Vegetable dyes and mustard stains, fruit and lipstick smudges, which stain some white appliance finishes, may now be removed with soap and water.

Nubelon S solves problems faced in laundries and kitchens, where vapors in the air frequently discolor painted surfaces. The new coating has already proved its worth on the farm as an improvement over galvanizing on such items as silos, fencing and prefrabricated farm buildings. Tests show that fence wire can be pre-coated before fabrication, saving cost and giving the completed fence thorough protection.

In the past, as a finish was made harder it became more brittle but this is not true with Nubelon S.

The new coating is more expensive than standard baking enamels and requires higher curing heat—about 425°.

The new finish is offered in various shades of white, gray, yellow, blue, tan, green and red.

Eagle Chemical Builds New Plant

The Eagle Chemical Co., Joliet, Ill., manufacturer of disiccants and industrial coatings, announces completion of its new plant in Mobile, Ala.

FUNCTIONAL FINISHES ! !

If you require your coatings to accomplish some specific task—something beyond mere ornamental appearance or average longevity—

TRY US!

We make ACRYLIC, ALKYD, CELLULOSIC and VINYLOID coatings for a very wide range of specialized industrial applications.

THE VARNISH PRODUCTS COMPANY
5206 Harvard Avenue **Cleveland, Ohio**

Oakite Cryscoat HC, a New Phosphatizing Material

Oakite Products, Inc., 132F Rector St., New York 6, N.Y., manufacturer of industrial cleaning and allied products, announces the development of Oakite CrysCoat HC, a phosphatizing material which creates a complex zinc phosphate coating on steel and iron to promote excellent adhesion of paint to metal.

Oakite CrysCoat HC provides a coating that is crystalline in nature and has a weight ranging from 200 to 1200 milligrams per square foot, depending upon how it is applied and the type of steel being treated. It may be used in tanks and in pressure-spray washing machines; with both methods the following Government Specifications are fully met: JAN-C-490, Grade I; 57-O-2C, Type 2, Class C; and PA-PD-191 Rev. A. The salt spray resistance of painted parts treated with CrysCoat HC is said to exceed the requirements of the present Government Specifications.

Sludging and scaling are held to a minimum. An all stainless steel tank setup is not necessary. The CrysCoat HC tank may be of stainless steel, if available, but mild steel is satisfactory. A third feature of this material is its simplicity in use. Only one material is involved—CrysCoat HC. The only upkeep required is the material itself. No special additives or toners are needed, it is claimed.

Protective Strippable Coatings

Peelac Protective Strippable Coatings, originally developed for aircraft manufacturers are now being put to work in many other industries.

Peelacs are made for both exterior and interior use. They are often used

to temporarily protect polished metal surfaces against damage during storage, shipping or fabrication. They have been used successfully in drop hammer and stretch press operations.

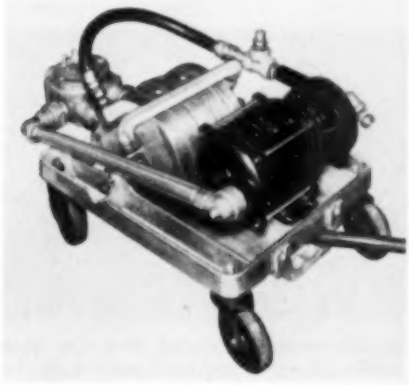
The basic advantages of the Peelac type coatings, according to the manufacturer, are easy application, anticorrosive action, excellent abrasion resistance, clean stripping after use.

This material is now distributed nationally, and shipped directly from the nearest of three factories. A new bulletin on Peelac is available by writing Andrew Brown Co., 5431 S. District Blvd., Los Angeles 22, Calif.

"Circa-Flo Pressurematic" Hot Spray Heater

The Spee-Flo Co., 720 Polk Ave., Houston, Texas, manufacturer of hot spray heaters for the application of lacquers, enamels, paints and liquid plastic compounds, announces the new Circa-Flo Pressurematic line of hot spray heaters. The Spee-Flo industrial heater does not have coils.

The Circa-Flo Pressurematic combines the Pressurematic Heater with a gearless, troublefree centrifugal pump designed to handle even the



Spee-Flo's portable pumps and heater unit.

THINNERS

LOW COST!

- ASK FOR QUOTATIONS!
- FORMULATED TO MEET ANY SPECIFICATION.
- QUALITY AND UNIFORMITY GUARANTEED.

Shipped in Tank Cars, Tank Wagons, Drums or 5 Gal. Cans.

Specialists in Thinners for the Leather Trade.

Low Cost Volume Blending and Drumming Service on Contract.

Write or Phone for Prompt service and deliveries.

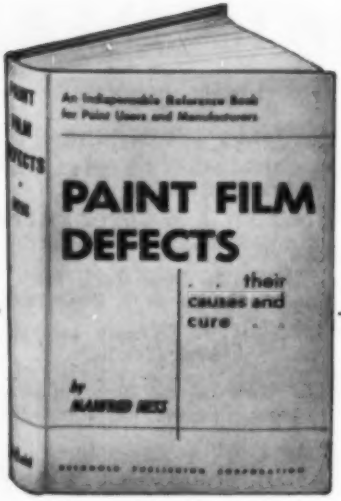
ELL-BEE CHEMICAL CO., Inc.
HANOVER N. J.
Phone—WHippany 8-0194

Economical **Detroit Handy "Tac" Rags** are prepared for you, and always ready for instant use. Removes dust, lint and sand particles from metal, wood and plastic surfaces before painting. Never dry out or harden. Guaranteed performance.

Immediate delivery from your supplier

Standard of the FINISHING INDUSTRY *Since 1934*

DETRO MFG. & SALES CO., CULVER CITY, CALIFORNIA



HERE ARE enumerated in this remarkably valuable book of 544 pages, all of the common and a variety of unusual and seldom heard-of defects and objectionable features that occur in paint, varnish, lacquer and synthetic enamel finishes; their probable, possible or real causes given; the effects described, and means of preventing and remedying these troubles fully outlined.

Chapters deal with these defects and troubles as they occur, 1) during or as a result of storage and preparation of materials before finishing; 2) when the materials are applied by various production methods and equipment, 3) during handling, processing or drying after application; and finally, 4) when and after the finished goods are shipped, displayed, stored or placed in service.

Defects covered include many more than could be named here, but to mention just a few there are; runs, sags, tackiness, films, too thin or too thick, slow drying, orange peel, alligatoring, wrinkling, pimples in films, pin holing, cracking, blistering, lifting, bleeding, blushing, blooming, discoloration, rainbow effects, gloss and dull areas, grained appearance, and scores of others.

Practical information is also revealed in reference to safety precautions to prevent fires or accidents in paint shops and finishing rooms, skin troubles of workmen, poisons from paint materials and fumes.

By referring to the "subject Index" of 84 pages in back of the book, it is possible to locate quickly, the answer to any particular failure, cause or remedy.

Price $12.00—Money Back Guarantee.

INDUSTRIAL FINISHING

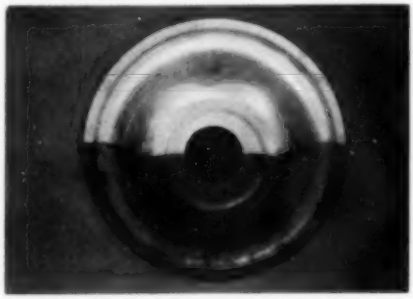
1142 N. Meridian St. Indianapolis 4, Ind.

most abrasive paints or other liquids. This simple and efficient pump is powered by a UL-approved, explosion-proof motor, which moves the hot material in continuous circulation from the heater to the spray head and return. This arrangement provides a constant hot spray temperature at the gun, as well as increased mobility with large fluid hose for wide spray application.

The new Circa-Flo unit is rated at seven gallons per hour, at 160° F., for the Pressurematic 300 Series; and at 14-gph., also at 160° F., for the Pressurematic 600 Series. Full heat on these units is reached in five to ten minutes.

Acid Derusting and Descaling Compound

Enthone Descaler 2A is a dry, free-flowing acid compound used for removing rust and scale from steels and alloy steels. The product is used dissolved in water in a concentration range from 4-oz. to. 3-lb. per gallon. The product gives a controlled acid concentration to prevent overpickling. It contains surfactants to dislodge oil films and to create a foam to reduce or eliminate fumes. Brighter, cleaner steel surfaces result.



Heavily rusted and scaled steel, the lower portion of which has been pickled by Enthone Descaler 2A. Note the clean bright surface that results.

NON-INJURIOUS ELECTRO NON-INFLAMMABLE

COLD STRIPPER

FASTEST *in Action* LOWEST *in Price*

WRITE FOR TESTING SAMPLE OR ORDER
5-GALLONS AT DRUM PRICE

Specify whether dip or brush type is desired

Allied Finishing Specialties Co.

2641 W. Grand Ave. • Chicago 12, Illinois

New Wrinkle Finishes Have Improved Color Stability

Wrinkle finishes in pale shades and pastel colors are included with a new line of Rinkleloid wrinkle finishes having exceptional color stability, announced by Standard-Toch Chemicals, Inc., 2600 Richmond Terrace, Staten Island, N.Y. Base of these finishes is a new resin, synthesized by the company's research laboratory, which eliminates or minimizes the color instability inherent in most wrinkle enamels.

Because of improved color stability and pattern control during baking, normal variations in oven temperature will not result in variation in Rinkleloid color. Blacks, grays, and browns will tolerate as much as 25° differences in oven temperature without the usual widely varying color tones. Blacks, in particular, will not develop the undesirable grownish appearance which reduces their attractiveness.

With the new resin, true delicate pastel colors such as pale cream, blue, green, ivory, and pink are easily produced. These colors are achieved without the usual brownish hue caused by heat-sensitive wrinkle base resins.

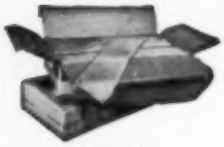
The ease with which this new line of wrinkle finishes may be controlled is expected to broaden the use of pale colors on office equipment, appliances, photographic equipment, and similar products.

White "Derusto" Paint

The Master Bronze Powder Co., Hammond, Ind., reports the addition of a new color to its present Derusto line of standard colors designed to prevent and stop rust. It is Derusto Engineering White. This paint does not contain lead.

For Dust Free Finishes!
BOND TACK CLOTH

IN ROLLS
Cut off any size piece to use as needed.



IN BULK
Cut and folded. Ready to use.

STAYS SOFT AND TACKY
A SPECK-FREE FINISH EVERYTIME

Now Available in Rolls or Cut Bulk—White or Gold. In Three Different Types of Cloth

Get your Tack Cloth packed just the way it's easiest for you to use . . . either in 150 yard rolls of 36" wide cloth or in handy cartons . . . 100 or more Tack Cloths to the carton.

No matter which way you buy it, you can be sure that every square inch will stay SOFT and TACKY until the very last bit is used up!

The Cut Bulk size is 18" x 36" . . . folded to 4½" x 18" for ease of handling. ALL BOND TACK CLOTH is **Spontaneous Combustion Proof, Lint-Free** and **Wax-Free.** Gives a sparkling speck-free Finish **every time.** Clean and sanitary. No waste.

TRY THEM and COMPARE RESULTS.
Samples Gladly Sent Upon Request.

BOND CHEMICAL PRODUCTS CO.
"The Tacky Wiper Specialists"
2641 N. CLYBOURN AVE. CHICAGO 14, ILLINOIS

Also Individually Packed in Glassine Envelopes—144 to the Carton

A Warranty of Satisfaction in Every Carton

Chemical Pretreatment Primer For Metal Finishing

A recently-developed addition to the "Vinsynite" group of corrosion-resistant metal coatings is announced by Thompson & Co., 1085 Allegheny Ave., Oakmont, Penna. Designated as "Vinsynite FS-3", the new product is a stable-type treatment formulated especially for roller coating on ferrous metals. It is yellow in color and when baked as recommended provides outstanding adhesion on ferrous metals and excellent resistance to all types of exposure.

While Vinsynite FS-3 is intended for use under top coats it will protect surfaces for short periods of time. In effect it chemically pretreats the metal and covers it with a thin vinyl primer film in one operation. According to the manufacturer, in addition to its superior adhesion and corrosion- resistant qualities, its use can result in much-increased efficiency of coating operations for a wide variety of steel products, especially where roller coating equipment is involved in finishing. Other types of Vinsynite are available for dip, spray and brush coating all metals, including aluminum, steel and copper, as well as glass and many kinds of plastics.

Corrosion-Resistant Finish

A new metal pre-treatment prior to painting movable steel office, laboratory and industrial partitions (and similar products) is based on Vinylite resins that inhibit rust and improve quality of the finish.

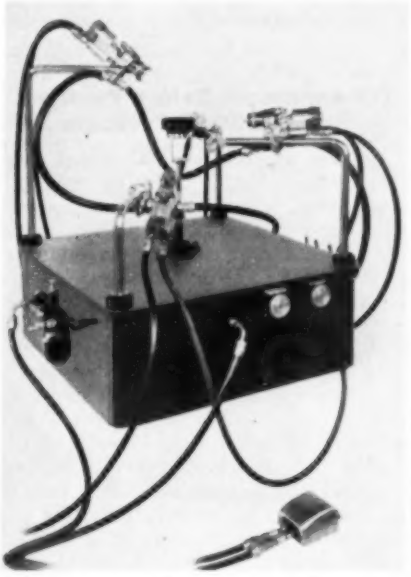
The new system easily fits into conveyorized finishing lines. Full wall or low-height metal office partitions are given a 3-coat system developed by John L. Armitage & Co., 245 Thomas St., Newark 5, N. J. This includes

the new wash primer based on Vinylite resins, a primer surfacer and a semi-gloss baking enamel. Excellent adhesion is a characteristic.

The wash primer can be applied by brushing, spraying, dipping or roller coating. The rust inhibitive and anti-corrosive properties of the Vinylite resin-based wash primer prevent blistering of enamel topcoats, even under extreme humidity or salt air conditions, and scratches in finished surfaces will not rust under enamel.

Automatic Single-Spindle Spray Machine

A new, automatic, single-spindle painting machine which, for shorter runs, removes the need of a conveyorized painting system, has been developed by the Conforming Matrix



Parts to be painted are put on and removed from the holder manually but are rotated and spray painted automatically as governed by dial controls.

AGATEEN

CLEAR COATINGS

Are the standard of Superior Quality! There is an AGATEEN Clear Coating to meet your specific requirements.

No samples.
Minimum orders accepted.

Agate Lacquer Mfg. Co., Inc.
Serving Industry Since 1927
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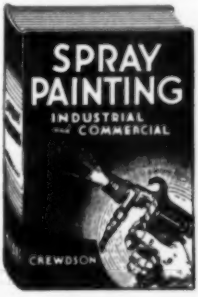
AGATEEN
THE LAST WORD IN QUALITY

—SPRAY PAINTING—
Industrial and Commercial
Contains 169 pages. Fully illustrated. Cloth. Price $2.50



This new book covers the fundamental principles of spraying technique, together with the latest developments and practices of this craft. Covers common paint pigments, paint extenders, enamels, oil and spirit varnishes, shellac, lacquer, synthetics, all types of modern air guns, spraying technique, spraying standard materials, spraying defects, their cause and remedy, flock and suede finishes, striping and lettering, pearl lacquer finish, also automatic spraying, electrostatic spraying, agricultural spraying and automobile spraying. Ends with the sprayers "Ten Commandments."

INDUSTRIAL FINISHING
1142 N. Meridian St. Indianapolis 4, Ind.

BOOKS
On Finishing Available

"MODERN ORGANIC FINISHES—Their Application to Industrial Products" (452 pages) new $8.50

"CHEMICAL FORMULARY" (Vol. IX) 7.50

"FINISHING METAL PRODUCTS"—2nd edition (352 pages) 5.50

"PRACTICAL FURNITURE FINISHING" (112 pages) 1.50

"FURNITURE FINISHING" (543 pages) 5.00

"SPRAY PAINTING"—Industrial and Commercial (169 pages) 2.50

"THE MIXING OF COLORS AND PAINTS" (292 pages) 3.00

"WOOD FINISHING" (361 pages) 3.00

"NATIONAL PAINT DICTIONARY" (704 pages) 7.50

"MODERN POLISHES AND SPECIALTIES" (313 pages) 7.50

"PRACTICAL COLOR SIMPLIFIED" (128 pages) 5.00

"GRAINING"—Ancient and Modern (224 pages) 5.00

"THE SILK SCREEN PRINTING PROCESS" (225 pages) 5.00

"SCREEN PROCESS METHODS OF REPRODUCTION" (252 pages) 4.00

"THE SCIENCE OF WRINKLE FINISHING" (204 pages) 5.00

"THE SCIENCE OF MODERN WOOD FINISHING" (386 pages) 6.00

"PAINT & VARNISH TECHNOLOGY" (509 pages) 8.00

"METALLIC AND NON-METALLIC COATINGS FOR GRAY IRON" (76 pages) 1.75

"PAINT FILM DEFECTS — Their Causes and Cure" (544 pages) 12.00

"INDUSTRIAL SOLVENTS" (764 pages) 12.00

"FINISHING MATERIALS AND METHODS" (320 pages) 4.00

Cash Must Accompany Order—
Send for Descriptive Circular

INDUSTRIAL FINISHING
1142 N. Meridian St. Indianapolis 4, Ind.

Corp., 331 Factories Bldg., Toledo 2, Ohio. It is being produced as a "portable package" which can be used in most standard spray exhaust booths.

One dial regulates the spindle speed from 100 to 400-rpm., while a second dial controls the length of time the spray guns operate. The spindle and guns go into action at the touch of a foot pedal, but stop automatically as predetermined by the dial settings.

Speed of operation is dependent upon the required loading time which, in turn, is controlled by the nature of the piece being sprayed and by whether masking devices are employed.

Provision is made for mounting as many as four guns, one in each corner, as required to cover the work. Uniform deposition of paint is assured on every job.

A work-holder is designed to serve also as a masking device when masking is required. Provision has been made for automatic oiling of motor.

Pre-treatment Before Painting Pressed Steel Products

A new and economical metal pretreatment prior to painting movable steel office, laboratory and industrial partitions is based on Vinylite resins that inhibit rust and improve quality of the finish. The new system is incorporated in conveyorized finishing lines.

Serving as both a metal conditioner and wash primer at the same time, this new pre-treatment is based on Vinylite resins to resist rust and corrosion, and improve the durability and adhesion of finish coats. Excellent adhesion for almost all types of baking enamels and primer surfacers results in less chipping or scratching of the finished product in place or in transit.

Full wall or low-height, metal office partitions have a 3-coat system developed by a company in Newark, N. J. It consists of the new wash primer based on Vinylite resins, primer sur-

RONCI SPEEDIP WHIRL ENAMELER

Made in Two Sizes, R-100 and R-200 Capacity 312-cu.in. and 1206-cu.in.

IDEAL FOR LACQUERING AND ENAMELING SMALL PARTS UP TO 7-IN. IN LENGTH

CUTS COSTS, SAVES UP TO 80% OF MATERIAL

Carries up to 75-lbs. per load, and up to 30 loads per hour can be coated with lacquer or enamel in these machines.

All operations are within the machine. Dipping tank is raised, submerging the parts in the basket, and then lowered and the parts whirled, throwing off excess material. No additional outside tanks required; no cleaning necessary when changing colors; no loss of material.

Prompt Deliveries

Write for further information and submit samples to be coated.

RONCI MACHINE COMPANY

A Division of F. Ronci Co., Inc.

2 ATLANTIC BOULEVARD CENTREDALE 11, R. I.

facer and semi-gloss baking enamel. Use of the wash primer improves both quality and durability of the finished partitions. Easy to apply by brush, spray, roller coat or dipping, an extremely thin film of the wash primer is put on. The new wash primer fits easily into conveyorized production with air drying time of 15 minutes or baking time of one minute. The rust inhibitive and anti-corrosive properties of the Vinylite resin-based wash primer eliminate blistering of enamel topcoats, even under extreme conditions of humidity, salt air or moisture; and scratches in finished surfaces will not rust under the enamel. Where insulation or sound deadening material in the metal panel prevents the use of a water wash system, the new wash primer can be used without moisture effects on the finish. The same advantage applies to any fabricated metal having pockets where water dip or spray treatment would trap moisture.—*Bakelite Co.*

TOMORROW'S Products Tested TODAY

A service to aid industry in producing longer-lasting and better-looking products. Quick predetermination of durability and permanency by actual exposure test in South Florida. Write us today for full information.

SOUTH FLORIDA TEST SERVICE

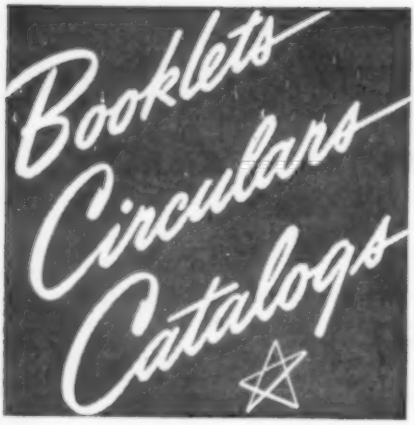
EST. 1931

4201 N. W. 7th St. Miami 34, Fla.

Aluminum Pigment for Paints

A new metallic pigment known as MD-515 Aluminum Paste has just been announced by Metals Disintegrating Co., Inc., Elizabeth, N. J., manufacturer of metal pigments, metal abrasives and metal powders.

This new aluminum pigment has a high pigment volume. It retains itself in suspension longer, has a faster leafing rate and is easily dispersible. These characteristics make it ideal for meeting the major requirements of stable ready-mixed aluminum paints, for which it was particularly designed.



Noise Control Folder

Industrial Sound Control, Inc., 5 Granby St., Hartford, Conn., announces a folder that describes sound enclosures for reducing noise of individual machines. Also illustrated are sound barriers, sound traps and sound-proof rooms. Copies are free.

Wire Belt Catalog

A new 132-page 8½ x 11-in. spiral wire bound catalog listing and describing woven wire belting for all industrial purposes is now available.

A copy will be sent free, if requested on your letterhead; The Cambridge Wire Cloth Co., Cambridge, Md.

Viscometer Bulletin

Norcross Corp., Newton 58, Mass., has published a 6-page bulletin on viscometers for recording or recording and controlling of viscosity of liquids.

This illustrated bulletin describes indicating and recording viscometers as well as viscosity control equipment.

Copies are available on request.

Tumbling Process Bulletin

A new bulletin just published describes five Tumb-L-Matic processes for finishing metal and plastic parts by tumbling the parts with abrasive materials in rotating barrels.

Wet and dry processes for metal and plastic parts, and a combination process for special problems and materials are described. The bulletin explains when and where to use the different processes and the results to be obtained with each.

Write Tumb-L-Matic, Inc., 4510 Bullard Ave., New York 70, N.Y., and ask for Bulletin PC-52.

Testing Instrument Catalog

Gardner Laboratory, Inc., 4723 Elm St., Bethseda 14, Md., has issued a revised and enlarged catalog of testing devices.

This 48-page catalog describes and illustrates testing equipment used in laboratories, as well as on the job in industrial plants. Also included are petroleum testing instruments and tools for steel drums.

Sealing Devices Brochure

The Franklin C. Wolfe Co., Inc., 3644 Eastham Drive, Culver City, Calif., announces a new brochure briefly describing its standard products and services for sealing bolts, studs, rivets, fittings, access doors, hatch covers, flanges, electric terminals, etc. For your copy write above attention Dept. L-101.

Fence Painter Bulletin

Are you faced with the problem of painting an industrial wire fence? An 8-page bulletin is available which describes rollers, brushes and materials for applying paint on wire fences, including barbed wire top sections, steel tanks and corrugated metal buildings.

For a copy, write FencePainteR Corp., 2314 W. Van Buren St., Chicago 12, Ill.

Die-Cast Zinc Folder

"Good News About Electrocleaning Zinc-Base Die Castings" is the title of an interesting folder now offered by Oakite Products, Inc., 132F Rector St., New York 6, N. Y.

The folder outlines how Oakite Composition No. 95 makes it possible to obtain brighter plating with no anodic blackening of castings and fewer rejects through removal of all soil.

Directory of Safety Posters

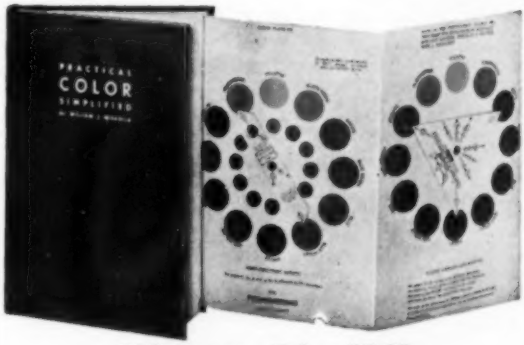
Illustrations—756 of them—both serious and comic are included in the National Safety Council's new 1953 Directory of Occupational Safety Posters.

Poster subjects are selected based on the latest occupational accident statistics. Included is a wide selection of general themes applicable to virtually all industrial fields.

The 72-page directory contains advice to safety men on how to choose and use posters effectively, and a detailed index makes it easy to locate all posters on a particular subject.

For a free sample copy of the directory and a price schedule of posters, write the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

PRACTICAL COLOR SIMPLIFIED



A Handbook for everyone interested in or using Color. Contains many Tables, Color Plates and the Miskella Patented Color Chart. Answers those vexing color questions which come up every day—the little technical puzzlers that bother. Contains a wealth of valuable information written in understandable form so all may understand.

The Patented Miskella Color Chart enables you to mechanically select colors, mix shades and tints, harmonize three or more colors and avoid color discords. Securely fastened in back of book. Colors are hand applied with lacquer on cloth not easily damaged by frequent handling. On it are mounted, pivoted celluloid arrow and triangle. This Chart **is worth alone the price of the entire book!**

128 Pages. Price $5.00

INDUSTRIAL FINISHING, 1142 N. Meridian, Indianapolis 4, Ind.

Cleaning, Stripping Metal; Free Bulletin Offered

A new catalog on Industrial Chemicals & Processes is announced by Whitfield Chemical Co., 14225 Schaefer Highway, Detroit 27, Michigan. This illustrated catalog contains complete data on cleaning of metal surfaces and assemblies, preparation for painting, and stripping organic finishes.

It describes in detail various processes used for: 1) removal of paint coatings from rejected parts and work hangers; 2) removal of oil, grease and buffing compound, drawing compound, abrasives, chips, before painting, plating, assembly, etc.; 3) removal of oil, rust, and scales. Formation of rust inhibiting phosphate coating before painting, 4) Industrial maintenance and cleaning for repair.

Putting Ideas to Work; New Booklet Free

A mechanism for Putting Ideas to Work is outlined in a new 16-page booklet just issued by The Battelle Development Corp., a wholly owned, non-profit subsidiary of Battelle Memorial Institute, Columbus, O.

It is frequently difficult for a free-lance inventor, or for research workers in universities and industry, to find a way for developing their creative ideas. Rarely does the individual have the facilities or money to carry his idea to the stage where it is of practical value to industry. Sometimes worthy ideas are conceived that are outside the immediate interest of the laboratory.

Corporations, as well as individuals, lose opportunities for economic gain by letting ideas lie idle.

C. RAYMOND SYER
Finishing Consultant and Industrial Engineer
P. O. Box 187
Pacific Palisades, Calif.

Data Sheets Available on Unit First Aid Kits

Unit First Aid Kits, a new National Safey Council data sheet provides a useful guide to better first aid for companies with scattered operations.

Crews on mobile equipment or groups working in isolated areas benefit from these kits with treatment and dressings packaged for one time use. With no half

empty bottles and half rolls of gauze, the kits remain sanitary during long periods.

The kits come in four sizes or can be tailor-made to each job as there are more than 100 basic items to choose from. As a rule one 24-unit kit should be used for each 50 employees. Ten and 16 unit kits are satisfactory for smaller groups.

Copies of Unit First Aid Kits data sheet D-202 are priced at 17 cents each at the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Binks' Sales Meeting Was Informal and Informative

For the Binks Mfg. Co.'s 1953 sales meeting, Mr. E. F. Watts, Sales Manager, made the field force an active partner in planning the program. Branch Managers favored abandoning the lecture-type meeting in favor of an informal discussion. Accordingly, the policy meetings were moved to the Board of Directors' Room at Binks main Chicago plant. Here Branch Managers and officials of the associated distributors got a chance to discuss their problems man-to-man with all department heads. All present praised this different type of meeting enthusiastically.

As a result of so many requests for "more details on product facts and likely new developments," one entire day was devoted to an intensive review of the main points covered in Binks' 5-day School on Spray Painting. The men saw as many of the equipment and visual aids used in the regular school session as time permitted. A typical comment about this educational feature: "One of the best days of the entire sales meeting."

Field reports indicated a need for information on how to sell, so one day was devoted to the principles of industrial selling, and how the selling of industrial painting materials is vastly different from the selling of consumer products.

At a banquet climaxing the meeting, Mr. Burke Roche, President, indicated that the success of this cooperative type of meeting would set the pattern for future meetings.

Pipe Insulation Book Free

An 8-page booklet describing Aerowrap, a new wrap-around insulation for hot or cold pipes of all sizes, has been published by Owens-Corning Fiberglas Corp., Toledo, Ohio.

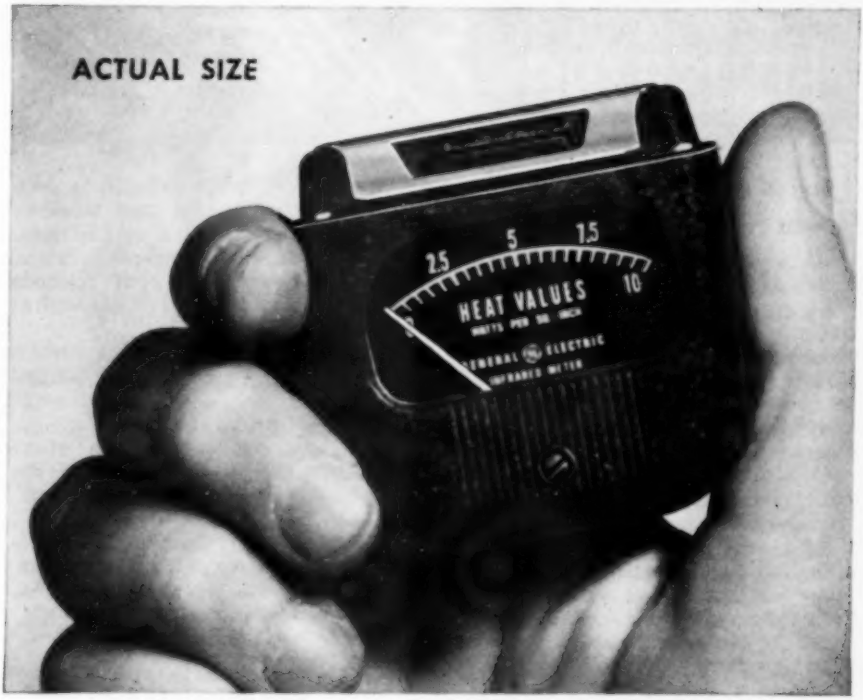
Aerowrap is a gray flexible blanket-type insulation that may be applied in any thickness by wrapping on layers until the desired thickness is reached. These features and many others are outlined in the new 8½x11-in. booklet which includes 17 photographs, thickness recommendations and application data.

Rust Removal Booklet Free

A booklet on rust and tarnish removal by means of six types of Rustclean has been published. It gives detailed instructions for the use of these new products by wipe-on, spray and hot and cold immersion methods. By following instructions it is possible to remove rust, retard corrosion and promote paint adhesion in a single procedure. Heavy, immovable vertical and horizontal surfaces can be treated by use of a special tailored type of Rustclean.

Copies of the booklet are available on request from Octagon Process, Inc., 15 Bank St., Staten Island 1, N. Y.

Informal discussion on policy at recent Binks sales meeting. Mr. E. F. Watts, Sales Manager, leads. Branch managers, sales personnel and key department heads attended this meeting.



EASY TO USE, THE INFRARED METER NEEDS NO EXTERNAL EQUIPMENT.

New G-E Pocket-size Infrared Meter Measures Infrared Radiation Directly

INCREASE EFFICIENCY of infrared processing with this new G-E infrared meter—designed for such applications as determining the proper location of infrared drying lamps and the study of the infrared absorption and transmission properties of materials.

WIDE RANGE provides measurements up to 10 watts per square inch. Price $67.50*. Send for bulletin GEC-953, Section 605-34, General Electric, Schenectady, N. Y.

**Manufacturer's suggested retail price.*

You can put your confidence in—

GENERAL ELECTRIC

Industrial FINISHING Editorial

Like It or Not, You Must Train New Workers

As a business grows, so must the members of its organization grow. This applies not only in numbers but in knowledge and proficiency. Modern mechanical equipment is capable of almost fantastic accomplishments, but man must understand its workings, possibilities and limitations in order to set up machines, make adjustments and perform maintenance work. Yes, every employe is becoming more important to every industrial plant.

This fact being admitted, what is being done about a training program? Time and death take no holiday, and sometimes the more valuable employes leave for personal reasons. Each finishing operation—whether it is spraying, filling, sanding or rubbing—requires a specific type of individual. Selecting the right type of person for the job is of prime importance. It is not an easy task nor one that can be dismissed quickly.

A definite training program is essential. Close observation and careful screening of employes to determine their potential skills is the first step. Then follows consulting with employes to learn their hopes and ambitions. The entire group of trainees may attend a series of lecture courses designed to orient them in company policies, rules, etc., and to give them an overall picture of what is to be accomplished.

Next, individual groups should attend classes dealing specifically with the particular work or operation involved. They must learn what the operation is intended to accomplish, why it is necessary, why it should be done at the particular time and place on the line, how the work should be done, what to avoid, the best methods to use, and the reason why such methods have proved to be effective, economical and satisfactory.

All of these points are of utmost importance in producing a skilled worker. Finally, see that those in training get actual practice in the operation, not out on the line where production will be retarded, but in the "classroom" where sufficient time can be taken for careful instruction.

Skilled workers can only be produced in two ways, either by long experience on the job, or by careful, intelligent and intensive training.

Personal Advertising

I enjoyed the editorial on advertising, as published on page 118 of February issue. The Editor's footnote on the same page tempted me to write and submit the attached editorial, expressing one of my viewpoints on advertising. Perhaps you will find its suggestions worthy of notice.—Richard Blumberg.

★ You! Whoever heard of You? How well known are your abilities and your talents within the realm of your social and economic life?

You must advertise yourself if you

★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those used.*

Mac's FASHION SEALERS & LACQUERS

A specially formulated sealer for the first coat under clear gloss or flat lacquers provides a good body and sands easily. Also works well under varnish and enamel. A production test will prove its superiority.

MAC'S FASHION LACQUERS are available in clear and opaque for application to all kinds of surfaces. Spray easily and give good coverage in any desired sheen. Outstanding for clearness and attractiveness. **Do not get cloudy.** Write for a production test sample and descriptive folder.

The Lawrence-McFadden Co.

Headquarters for Fine Finishes Since 1875

7430 STATE ROAD "Our 78th Year" PHILADELPHIA 36, PA.

expect to sell yourself. Sell yourself to your employer, to your friends and neighbors and even to your family.

Consider yourself now as a can of tomato soup. Place yourself on a shelf in a large super-market. You are surrounded by four or five other brands of tomato soup. How often would you lose out to the other brands because they have more appealing labels, or better established reputations?

Their selling labels were not accidental. They were the results of serious thought and planning. Their better reputations were not merely strokes of good luck but rather the results of their makers' long years of continually producing good products. And it was advertising that put these features before the public.

Actually you and I are, in a sense, products. We want to sell our abilities to our employer and sell our personalities to our friends and families. Why then, shouldn't we advertise to outdo our competitors?

Many ways exist of effectively advertising a product, but keep in mind these two basic thoughts. First, remember the label on the can. Your personal appearance is your label. Neatness is essential but the most attractive and selling feature is a friendly, pleasant expression and attitude. Everyone will buy friendliness.

Second, remember that every job you do, every letter you write, every report you make, every telephone call or personal contact—all are small fragments falling into place and forming your reputation. You'll grow socially and economically as your reputation grows. So build it on honesty, sincerity and accuracy, with cooperative and enthusiastic efforts.

If you will do these things, you'll never be the last can on the shelf.

Masking Some Areas to Keep Off Paint

Masking certain parts of a product for protection against overspray, handling and damage is always an important operation. Several different kinds of masking materials are available. Which type to use will depend largely on the size and shape of the area to be protected, what kind of handling the product will receive while it is masked, and the length of time the masking is to remain in place. A few random examples will serve to illustrate.

For producing two-tone effects or wide stripes on a railroad passenger car, nothing has been found to equal a tough kraft paper, held in place by pressure sensitive tape, for efficiency and economy. The same would apply to the bodies of large trailer trucks, busses and even passenger cars.

For protecting certain areas on small products such as camera parts, some toys, auto name plates, nevelties, etc., most concerns rely upon air controlled precision metal masks to shield areas during spray painting.

To protect relatively small areas over a long period of time, say for several operations, die-cut to shape pressure sensitive tape does an efficient job. Those die-cut shaped masks may be attached to shaped cardboard if double surface tape is used, to mask holes or depressions so that the mask will be rigid and not loosen around the edges due to handling pressure.

To protect composition and plastic tops used on tables, dressers, chests, etc., during finishing of the furniture, a strip-off or peelable coating may be sprayed over the top. After the furniture is completely finished, the temporary strip-off coating is peeled off.

Some of these masking materials are sufficiently heat resistant to withstand a trip through the oven without coming off or causing any harm to the adjoining paint, lacquer or enamel coating. This is a desirable feature in some kinds of work.

SPRA-KLEEN
The More Effective
SPRAY-BOOTH
WATER-TREATMENT
• Foam Free Operation
• Easier Sludge Reclamation
• Lower Operating Cost
WRITE FOR FREE TRIAL SAMPLE
HARCO CHEMICAL CO.
CRANFORD • NEW JERSEY

PEARL ESSENCE
"Astralucine Brand"
Produces a high luster
on a variety of finishes
Write for your free copy of our informative Technical Bulletin
"Pearl Essence Finishes"
—what they are and how to use them.
Argenta Products Co.
EASTPORT, MAINE

Jeffery Is Made Gen. Sales Mgr. of Currier Company

Appointment of Robert W. Jeffery as General Sales Manager of the Currier Co. (Industrial Product Finishing Systems), Oakland, Calif., was announced recently by Farnsworth Currier, president of the firm which is located at 710 73rd Avenue.

Formerly manager of infra-red sales for a well-known concern in Ohio, Jeffery is a graduate of Carnegie Institute of Technology and a registered engineer. During World War II he served in research and development of electronic and infra-red devices at Wright Field, Dayton.

Spe-de-way

WOOD BLEACH

This Single Operation, Controllable, Patented Bleach

★ REQUIRES NO NEUTRALIZATION
★ LEAVES NO DEPOSIT
★ DOES NOT RAISE THE GRAIN
★ WILL NOT WARP THE THINNEST OF VENEER
★ LEAVES WOOD NEUTRAL

ECONOMICAL — CONTROLLABLE — DEPENDABLE

Gallon Unit makes two gallons of solution. Application by spray or sponge.
Wood ready to finish in less than one hour.
Delivered prices quoted on request.

Mfrd. By

Spe-de-way Products Co.

3639 No. Columbia Blvd. Portland 17, Oregon

NEW Chicago Warehouse Stock Location
Griswold & Bateman Whse. Co., 1525 Newberry Ave.—Canal 6-2770

Catalyzed Finishes Have Their Place

★ In recent years the use of catalyzed finishes has increased considerably. This type of finish must be mixed with a catalyst to be useful. The mixture is stable for only a limited time, varying from seconds to a number of days, before it gels. Sometimes, to prevent premature gelation, a double-nozzled spray gun is used. The finish comes out of one nozzle and a solution of the catalyst comes out of the other, the two mixing when atomized.

The catalyst "kicks over" the finish, hardening the coating into a usable film. The catalyst may be a strong or weak acid or base, depending on the nature of the material with which it is used. Urea-formaldehyde resins, phenolic resins, and epoxy resins are among those used with catalysts. Some systems need only an air dry. Others need a bake at moderate temperatures (140° to 150° F.). Still others need a bake at higher temperatures (300° to 350° F.), even with the catalyst, to achieve optimum results.

There are various merits to these catalyzed systems. Often films may be obtained that would be difficult, if not impossible, to obtain otherwise. For instance, catalyzed finishes are used on furniture, giving a very hard durable finish. To get an equivalent coating without the catalyst would require baking at temperatures so high as to harm the wood.

Sometimes catalyzed finishes will eliminate the need for baking ovens, or will require less of a bake than would normally be given. Space formerly used for drying can then be used for other purposes, or the rate of production can be increased. A catalyzed system may be adapted because a more durable finish can be ob-

tained without increases in heating capacity. Catalyzed systems are useful on items such as tanks that are too big to be baked in ordinary ovens.

There are certain features about some of these catalyzed systems that call for a bit of caution on the part of users. Some catalysts may be corrosive to the skin and eyes, and therefore somewhat of a hazard in the finishing department. However, observation of simple rules of safety is all that is required to handle these materials safely. In the case of those that are mixed with the material in a container, there is the bother of mixing the catalyst with the finish and a possible loss from the gelled material that has stood too long before use.

One of the biggest hazards is that of mixing the catalyst with the finish in the wrong proportions. Too much catalyst may result in gelation of the coating before it can be applied, or in a non-durable film if it is applied. If the finish contains too little catalyst or no catalyst, the drying will be poor, and the coated pieces will probably have to be stripped and recoated.

In the final analysis the decision of whether or not to use a catalyzed system depends upon individual plant conditions and the need for an improved and/or a faster drying coating. It is a matter to be left to the judgment of the plant management, who can best assess all the factors involved.—*E.V.G.*

Bulletin on Air Filters

A bulletin No. 1505-1, describing and illustrating the MSA Ultra-Aire Space Filter is announced. Efficiency, 99.95% effective against particles 0.3 micron in diameter; has proved effective in filtering tobacco smoke.

Copies of the bulletin are available without cost from Mine Safety Appliance Co., Braddock, Thomas & Meade Sts., Pittsburgh 8, Pa.

DeVoe & Raynolds' Plant Mgrs. Meet at Jones-Dabney Co.

At a recent 3-day conference in Louisville, Ky., Devoe & Raynolds' Plant Managers met to pool information. Pertinent problems such as "Plant Costs," "Traffic," "Personnel and Labor Relations" were discussed and solutions considered on a national as well as regional basis.

The Plant Managers, from six different states, enjoyed a tour of the Jones-Dabney Co. plant and laboratory, and the Devoe Plant's laboratory and art department.

Seated, reading left to right: Palmer Kalajian, B. W. Dysart, Basil Howell, E. F. Musterman, Geo. Turner, Jack MacCallum Wm. Tonks. Standing, left to right: Tom Thompson, Mike Eby, Ken Miller, Walt Plumb, Ken Sipe, Roy Gunter, John Winzenried, John Benda, Ken Adams, Lyle Hoskin, Ed Ganoe.

Hercules Powder Co.'s new "Mobile Lacquer Information Center" will tour the country to show new developments in lacquers. The auto and 35-foot trailer are finished in lacquer.

Lacquer Information Center To Travel Over Country

A "Mobile Lacquer Information Center" will be used to bring to the attention of industry throughout the country new developments and improvements in lacquers. It is promoted by Hercules Powder Co., Wilmington, Delaware.

The unusual industrial exhibit, which had its premiere showing recently, is housed in a custom-built, lacquered, 35-foot trailer completely fitted as a traveling display and application laboratory.

The trailer has facilities for showing motion pictures; it has a conference room and exhibits, which include the latest in lacquer spray equipment. The spray equipment will be moved into plants for on-the-spot demonstrations.

Display panels in the trailer tell the story of important new developments which are expanding the variety of applications for lacquers on both metal and wood surfaces.

Durability, sunlight resistance, rust-resisting primers, military finishing systems, floor finishes, comparative results achieved by four ways of applying lacquer, and aerosol lacquers are some of the subjects of the display panels.

Other panels illustrate the types of coatings which can be formulated with Hercules chlorinated rubber, paper lacquers, and ethyl cellulose specialty lacquers.

The trailer itself is finished inside and out with nitro-cellulose lacquers, as is the exterior of the car which will haul the trailer.

The "Mobile Lacquer Information Center" is scheduled to visit lacquer plants throughout the country and in Mexico and Canada. A representative from Hercules' lacquer promotion group and Hercules' Experiment Station will travel with the exhibit. They will be joined by sales office representatives in various cities.

Frank P. Wood Joins Andrew Brown Co.

Newest technical representative to join the Andrew Brown Co.'s western staff is Frank P. Wood.

He has been finishing foreman for several large furniture factories, and finishing consultant for the National Furniture and The Grand Rapids Furniture Associations.

The Andrew Brown Co.'s factories in California, Texas and Maryland all make Brolite wood finishes, but if you want Wood's advice on your wood finishes, the western factory address is 5431 S. District Blvd., Los Angeles 22, Calif., telephone JEfferson 5201.

Interior of Hercules' new "Mobile Lacquer Information Center" includes equipment exhibit and display panels which show new developments in lacquers for wood and metal surfaces.

Udylite Names Hoefer Vice President

Election of August B. Hoefer as vice president of Udylite Corp., and vice president and general manager of Frederic B. Stevens, Inc., a wholly owned subsidiary of Udylite is announced.

Mr. Hoefer joined the Udylite Corp. in November 1928 after graduation from Purdue University with a degree in chemical engineering. A year later he became sales engineer at the New York branch, and district manager in 1939.

Write for Information & Literature.

BEACH STA-DRI
Moisture & Oil
SEPARATORS

Filters out moisture, oil, rust, dirt, scale and scum from your air lines.

Made in four sizes, cleaning from 500,000 to 4,000,000 cu. ft. before saturation requiring installation of new filter elements. Capacities from 30 c.f.m. to 300 c.f.m., in sizes from 2½"x8" to 4"x30".

Prices range from $20.50 for the smallest size to $137.50 F.O.B. Boonton, N. J., for the Jumbo Model BB shown in illustration.

Jumbo Model BB

Hundreds of STA-DRI Moisture and Oil Separators have been in successful operation for many years.

Write for descriptive literature.

Beach Precision Parts Co.
120 MECHANIC STREET
BOONTON, N. J.

Random Comment on the Industrial Scene

(Continued from page 6)

string, tape or staples, and is adaptable to either manual or mechanical packaging.

For storage or shipping of small finished parts, or for protecting delicate equipment against dust or moisture, this material should prove the economical answer.

* * *

Noise-stop baffles, developed by the Owens-Corning Fiberglas Corp., Toledo, Ohio, to reduce noise, are gaining wide acceptance for use in existing factories. These new sound-absorbing non-combustible Fiberglas baffles may be hung easily and quickly where a conventional acoustical ceiling is impractical because of obstructions like monorails, bus bars, sprinklers, lighting fixtures, pipes or girders.

Easy to put up or take down; washable too.

Everything
For Wood Finishing

QUALITY

SINCE 1888

H. BEHLEN & BRO., INC.

EAST COAST
10 Christopher St.
New York 14, N. Y.

FACTORY
Kearny, N. J.

WEST COAST
1755 Berkeley St.
Santa Monica, California

Fiberglas noise-stop baffles are made of fine fibers of glass bonded with a thermosetting binder into a rigid panel, 24-in. wide, 48-in. long and 1½-in. thick. The baffle is enclosed in an opaque plastic film.

This acoustical treatment absorbs the sound from clattering machinery that would normally strike the unyielding surface of the ceiling and bounce back to the working area. Sound waves striking the surface of the baffles are transmitted by the diaphragmatic action of the plastic film to the millions of tiny, dead air pockets between the fibers of glass that compose the baffle. Most of the energy of the sound waves is quickly absorbed in the baffle.

* * *

Cellulose Fiber, finely ground with exceptionally high absorbency, is now available. It is called "Cottontex," and is used for degreasing and drying operations in tumbling barrels. Absorbing more than eight times its weight, it does a fast thorough job of soaking up oil, grease or any liquid from the product. It is light in weight, economical, fast acting, and soft, so as to protect parts in the tumbling process.

* * *

"Flying lighthouses" are being adopted by commercial airlines in the United States as the latest move in their constant effort to increase aerial safety.

These lighthouses-in-the-sky are the airliners themselves, many of which henceforth will carry a high-intensity rotating beacon mounted atop the vertical fin of the tail assembly. Greater safety in the air is the expected result.

Light source for the beacon is a 4½-in. diameter lamp of the sealed-beam type, developed especially for this purpose by General Electric.

ACORN CHEMICAL CO. WATER WASH TOLEDO, OHIO

A liquid water treatment for Spray Paint Booths

- *Unites Readily with Water*
- *Non-Foaming*
- *No Pre-mix*

Send for literature . . .

ACORN CHEMICAL CO.,

618 Winthrop, Toledo 10, Ohio

Serving **THE SOUTHEAST**

- LACQUERS
- SEALERS
- FILLERS
- TONERS
- GLAZES
- PIGMENTED WIPING STAINS
- NGR STAINS

Complete Technical Service At Your Disposal

SNYDER BROTHERS COMPANY

Manufacturers of Quality INDUSTRIAL LACQUERS

P. O. BOX 548 — TOCCOA, GEORGIA

CLASSIFIED ADVERTISING

The rate on ads appearing in this department is $1.00 per line of 6-pt. light face type, per insertion. Minimum charge, $5.00. Ads set in 8-pt. extra bold face type cost $2.00 per line, per insertion.

POSITION WANTED.

Finishing Supervisor, age 49, in television cabinets and top grade furniture for 28 years. 14 years conveyor work. Have supervised 220 men and women through finish, trim and pack. Address IF-107, care Industrial Finishing.

PAINT ENGINEER AVAILABLE.

Wide experience in large production refrigerators, air conditioning home and institution, water heaters, various home appliances. Capable of complete direction laboratory and installation of modern systems of finishing. Pleasing personality, ability to work harmoniously with production people. Address IF-108, care Industrial Finishing.

POSITION WANTED.

Sales-service representative available for industrial finishes or raw material manufacturer. Two years laboratory paint formulation plus two years sales experience. B.S. degree. Many successful customer contacts in the Chicago area. Address IF-103, care Industrial Finishing.

FINISHING FOREMAN WANTED.

This is a permanent position with a real future. Furnish us with a complete history of previous connections. The locality of the plant is in Western New York. Address IF-997, care Industrial Finishing.

PRODUCTION MANAGER OR SUPERINTENDENT WANTED

With or without industrial engineering experience. Experienced in producing good grade Dining Room furniture. Must have complete knowledge of all details pertaining to various departments. Old established firm. 90 employees. Located in S.E. Pennsylvania. Give full particulars, stating age, experience, reference, salary expected. Also Mill Room foreman with above experience. Address Box No. 29, Red Lion, Penna.

PAINT CHEMIST WANTED.

We urgently require services of a chemist experienced in plant and institutional maintenance finishes. Expanding organization. All benefits of large company. Salary open. All replies held confidential. Address IF-109, care Industrial Finishing.

FINISH FOREMAN WANTED.

Manufacturer of steel cabinets in large East Coast city requires finishing foreman having practical knowledge of conveyorized production in all phases of organic finishing. Must be qualified to meet schedules with high quality finish, in a department of 20 people. Give complete information regarding age, experience, family status, salary requirements and references. Address IF-117, care Industrial Finishing.

SALES REPRESENTATIVE WANTED.

Experienced in selling and servicing industrial finishes in Massachusetts and Rhode Island. Must have technical background in baking synthetics, lacquers and specialties. Company very progressive, has excellent reputation and laboratory. Unusual opportunity for man with right qualifications. Address IF-111, care Industrial Finishing.

SALESMAN—INDUSTRIAL FINISHES STATE OF WISCONSIN

EXCEPTIONAL OPPORTUNITY TO STEP INTO ESTABLISHED TERRITORY.

Nationally-known industrial finishes manufacturer has splendid opportunity for experienced salesman whose current earnings are in the upper four-figure bracket—but wants to earn more.

The "go-getter" we select will step into an already established, highly lucrative territory with an unlimited sales potential.

Replies will be treated in strict confidence. Our empoyees know of this advertesement. Address IF-112, care Industrial Finishing.

WANTED TO BUY.

Will buy your dirty Thinners and Solvents. Send samples or letters giving approximate contents and solids. Address THE JOHANN CO., 8547 S. Ashland Ave., Chicago, Ill.

DISTRIBUTOR WANTED.

Advertiser marketing world patent product of undoubted value to paint manufacturers, builders, merchants, steel constructors, engineering companies, garages, automotive stores, desires contact with existing organization capable of handling distribution. Great sales possibilities. Address IF-113, care Industrial Finishing.

REPRINTS AVAILABLE

"The Theory and Practice of FINISHING FURNITURE"

from October, November, December, 1951, and January, February 1952 Issues.

PRICE 20 CENTS PER COPY—Stamps Accepted.

INDUSTRIAL FINISHING Magazine

1142 N. Meridian, Indianapolis 4, Ind.

PARTNERSHIP OFFERED.

British company of standing, desirous to market in U.S.A., world patent product of proved value and large selling possibilities for the automotive and engineering industry, metal finishing, steel-constructing and paint companies, seeks contact with persons or firms able to provide capital or finance on partnership basis. Director of advertiser will shortly arrive. Address IF-114, care Industrial Finishing.

FOR SALE OR RENT.

Paint, lacquer and varnish factory within 30 miles of New York. About 110,000 sq. ft. Railroad siding, 100% sprinklered, oil-heated. Efficiently managed, good working force. Buildings and equipment lend themselves to a yearly output of about 4 million dollars. Principals only. Easy terms for responsible party. Address IF-115, care Industrial Finishing.

FOR SALE.

Air compressor complete with 10-HP motor. Priced reasonable. For details write KENWORTHY BROTHERS CO., Westboro, Massachusetts.

FOR SALE.

1 DeVilbiss, two-gun traverse machine, 72-in. stroke, regulators, gauges, 1½ HP exhaust fan for 34-in. diameter stack, one 60-gallon and one 50-gallon pressure tank. Contact the SOUTHERN MILLS, INC., Senoia, Georgia.

FOR SALE.

ROTO CLONE, used, but in top condition. No. 5 Type N, Class 500. Serial No. 19399 APR "B" 5500 CFM @ 6½ T.P. Access door standard-location control box. Made by American Air Filter Co. Cost $1250.00 new. For details and price write TOM MASTIN, M. M. Hedges Mfg. Co., Inc., Chattanooga 8, Tennessee.

INFRA RED BAKING OVEN.

50-ft. long, sectional, conveyorized. Complete with electrical controls. Presently in operation. Reasonable. Humboldt 3-6600 (N.J.). Address IF-116, care Industrial Finishing.

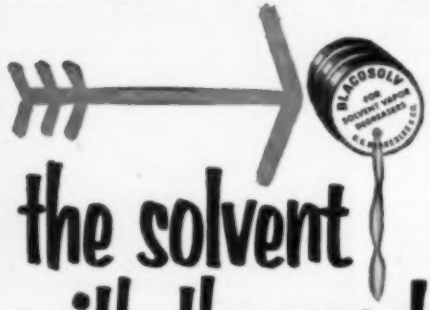
FOR SALE.

Despatch Finishing System: 3-stage washer, dry-off oven, two paint spray booths, prime and finish coat bake oven including complete conveyor. Work clearance 30" wide x 44" high. Excellent condition. Priced well. ALLIED ENGINEERING & EQUIPMENT CO., 833 E. Kilbourn Ave., Milwaukee 2, Wisc.

FORD CUPS

THE VOL-U-METER COMPANY
Buffalo 16, N. Y.

BLACOSOLV



the solvent with the modern neutral stabilizer

The solution to your solvent problems . . . the most modern solvent for high stability in ***vapor degreasing*** *of metal parts. Contains a mixture of entirely new and different stabilizers that* ***prevent*** *solvent breakdown and possible acid formation. Blacosolv is the* ***one solvent*** *for all metals or combinations of metals. Does not affect or stain any metal . . . easily distilled and reclaimed from oil and impurities . . . the most economical solvent that assures better production and higher stability.*

G. S. BLAKESLEE & COMPANY

Established since 1880. Manufacturers of Blakeslee Solvent Vapor degreasers—Metal Parts Washers—Blacosolv degreasing solvent.

Write to the Chicago office today for full information.

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1379 Bloor Street, West
Toronto 9, Ontario, Canada

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The one and only answer to your exact finishing requirements may be . . .

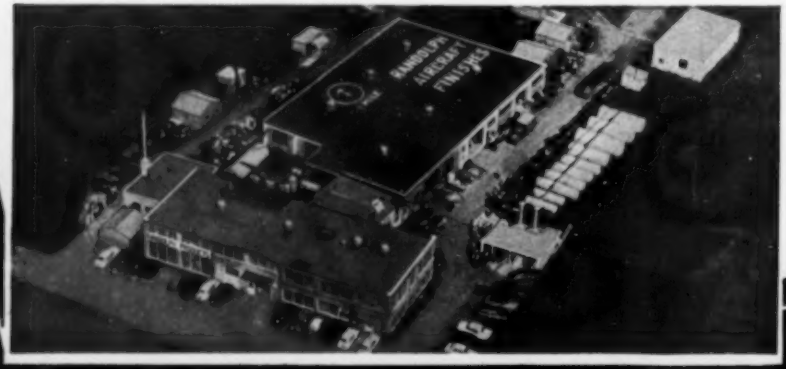
Randolph
HOT SPRAY LACQUERS

Many manufacturers are getting astonishing results—quicker application, fewer coats, speedier production and remarkable savings in costs—by using Randolph's *specially-formulated* Hot Spray Lacquers. Appearance, durability, sales appeal of the product are often improved. Are you sure that your own operation won't benefit in every way from this process?

To help you find out, we are launching a customer service program adapted to your individual needs. Simply write us—and we will send a team of experienced technicians to study your methods, demonstrate hot spray techniques and advise as to their desirability in your case.

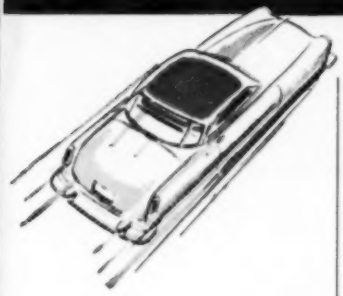
Randolph Hot Spray Lacquers are now proving the preferable finish for a wide variety of products. Yours may be among them. You can make sure by writing us today!

RANDOLPH PRODUCTS COMPANY
Technical Department
CARLSTADT, NEW JERSEY



DOPES · LACQUERS · ENAMELS · THINNERS

give the GO signal to DETREX for guaranteed degreasing performance



for free literature

The new Detrex Degreaser Catalog clearly illustrates the advantages of Detrex degreasing equipment and shows several types of hand operated and conveyorized models. For your free copy of this valuable reference piece, simply fill out the coupon below or write direct to the department shown. No obligation, of course.

When you give the go-signal to Detrex, a skilled, well-coordinated team goes into high gear on your degreasing needs. One of our trained field staff surveys your operations, makes on-the-spot tests and demonstrations, and takes into consideration every factor that plays a part in overall degreasing efficiency. With this information, Detrex chemists and technicians from our laboratories join efforts with our equipment engineers to determine the type of degreasing operation best suited for your needs. Then, final recommendations are submitted to you along with actual performance data for the operation. *The results are guaranteed!*

Detrex guarantees results because only Detrex has complete control of the process from start to finish. Detrex is the world's leading manufacturer of degreasers—industry's largest direct supplier of trichlorethylene degreasing solvent. Detrex is the *only* company that produces both.

But Detrex service does not stop with delivery on your order. The Detrex Field Service Engineer visits your degreasing operation regularly to make sure it continues at maximum efficiency and economy. He will point out ways to conserve solvent and increase production. Detrex assists in the training of operators and supervisors. In effect, they become skilled advisors on your staff without fee. There is absolutely no charge for the service . . . it comes automatically to Detrex customers.

Give the go-signal to Detrex on your degreasing operations. It will save you money, assure results.

DETREX CORPORATION
DEPT. 109A, BOX 501
DETROIT 32, MICHIGAN

Please send me a copy of your new degreaser catalog.

Name.....

Company.....

Address.....

City.....Zone....State.....

DETREX CORPORATION

DEGREASERS • DEGREASING SOLVENTS • WASHERS
ALKALI & EMULSION CLEANERS • DRYCLEANING
EQUIPMENT • PHOSPHATE COATING PROCESSES

THE INVISIBLE TOOL

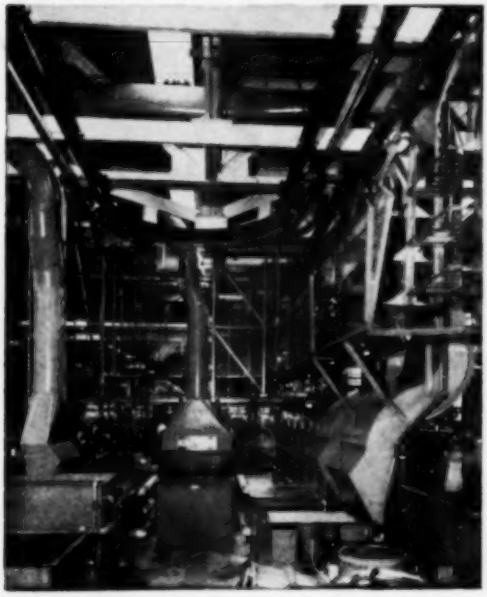
at work in the

FORD AUTOMATIC TRANSMISSION PLANT

NUMBER 4 OF A SERIES

KIRK AND BLUM Systems

Remove Steam and Chemical Vapors in Cleaning



Cleaning tanks in the Finish Grinding Department of the Ford Automatic Transmission plant. These five tanks are fitted with KIRK & BLUM modified lateral cross draft hoods, which remove fumes below the operator's breathing level.

The fumes of chlorinated solvents as well as steam and water vapor from heated soak tanks and washing machines are controlled in this plant by KIRK & BLUM Systems. As shown here, a number of fume collecting points are piped to a ceiling-mounted fan which exhausts outside the plant. Make-up air is furnished by another KIRK & BLUM System.

In the ultra-modern Ford Motor Company Automatic Transmission Plant, 37 distinct KIRK & BLUM Systems aid in the production of Merc-o-Matic and Ford-o-Matic transmissions. In heat treating, quenching, welding, cleaning, machining, woodworking, maintenance and assembly operation, they provide "Clean Air . . . the INVISIBLE Tool" in this model plant.

Let the experience of KIRK & BLUM engineers work for you. Write for literature. The Kirk & Blum Manufacturing Co., 3131 Forrer St., Cincinnati 9, Ohio.

KIRK AND BLUM

FUME CONTROL SYSTEMS